93d Congress
2d Session

SENATE

Document
No. 93-65

REPORT

OF THE

PROCEEDINGS OF THE FORTY-SIXTH MEETING OF THE CONVENTION OF AMERICAN INSTRUCTORS OF THE DEAF

INDIANA SCHOOL FOR THE DEAF

Indianapolis, Indiana

CONVENTION THEME

"EDUCATIONAL CROSSROADS FOR DEAF CHILDREN"

JUNE 24-29, 1973

Ordered to be printed with illustrations

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U.S. GOVERNMENT PRINTING OFFICE
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WASHINGTON : 1974

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S. Con. Res. 55 Agreed to March 4, 1974

Ninety-third Congress of the United States of America

AT THE SECOND SESSION

Begun and held at the City of Washington on Monday, the twenty-first day of January, one thousand nine hundred and seventy-four

Concurrent Resolution

Resolved by the Senate (the House of Representatives concurring), That the report of the proceedings of the forty-sixth biennial meeting of the Convention of American Instructors of the Deaf, held in Indianapolis, Indiana, from June 24, 1973, through June 29, 1973, be printed with illustrations as a Senate document. Five thousand five hundred additional copies of such document shall be printed for the use of the Joint Committee on Printing.

Attest:

Francis R. Valeo

Secretary of the Senate.

Attest:

W. Pat Jennings

Clerk of the House of Representatives.

LETTER OF TRANSMITTAL

Gallaudet College,
Office of the President, Kendall Green,
Washington, D.C., July 3, 1973.

Hon. Spiro T. Agnew,
President of the Senate,

Hon. Carl Albert,
Speaker of the House.

To the Congress of the United States:

In accordance with the act of incorporation of the Convention of American Instructors of the Deaf, approved January 26, 1897, I have the honor to submit the proceedings of the 46th meeting of the Convention, held at the Indiana School for the Deaf, Indianapolis, Indiana, June 24–29, 1973, inclusive.

I have the honor to be

Very respectfully, your obedient servant,

Edward C. Merrill, Jr.,
President.

LETTER OF SUBMITTAL

California School for the Deaf,
Riverside, Calif., July 9, 1973.

Dr. Edward C. Merrill, Jr.,
President, Gallaudet College,
Washington, D.C.

Dear Sir: In accordance with Section 4 of the Act of Incorporation of the Convention of American Instructors of the Deaf, approved January 26, 1897, a report is to be made to Congress, through the president of Gallaudet College at Washington, D.C., of "such portions of its proceedings and transactions as its officers shall deem to be of general public interest and value concerning the education of the deaf."

In agreement with the above request, I have the honor to submit herewith a comprehensive report containing such papers and addresses as may be of special interest or of historic value, all of which were presented at the 46th meeting, held at the Hotel Marott, Indianapolis, Indiana, June 24–29, 1973, inclusive.

May I respectfully request that this report be laid before Congress.

Very truly,

Gerald Burstein,
Secretary-Treasurer.

FOREWORD

The published proceedings of the Convention of American Instructors of the Deaf, Inc., dating from the time the organization was established in 1850 to the present, contain an almost complete history of the development and progress of the education of the deaf in America. This report of the proceedings of the 46th meeting of the Convention held at the Indiana School for the Deaf, Indianapolis, June 24–29, 1973, adds another chapter of interest to educators of the deaf and to their associates in allied fields.

The editor and associate editor wish to express their appreciation to the following people who have assisted in the preparation of this volume:

To Mr. Alfred Lamb, Superintendent of the Indiana School, and his staff, for making space and facilities available for the editors during the progress of the meeting, and for making the contacts required to develop the concurrent resolution for authorizing publication of these proceedings.

To Mr. Robert Dawson, program chairman and assistant to the president of the Florida School for the Deaf, St. Augustine, for coordinating the preparation and collection of the papers included in these proceedings.

To Mr. Albert Davis, Jefferson City, Missouri, recorder of business sessions, for the initial editing of the material in preparation for printing.

To Mr. John Coder, Senate Rules Committee, and to Mr. Donald Casey and Mr. Hugh Travis, Office of the U.S. Senate Printing Clerk, for their continuing patience, consideration and advice during the correction of proof, indexing, printing and binding of these proceedings.

FERNE E. DAVIS,
Editor.
SARAH W. TOOMER,
Associate Editor.

ACT OF INCORPORATION

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That Edward M. Gallaudet, of Washington, in the District of Columbia; Francis D. Clarke, of Flint, in the State of Michigan; S. Tefft Walker, of Jacksonville, in the State of Illinois; James L. Smith of Faribault, in the State of Minnesota; Sarah Fuller, of Boston, in the State of Massachusetts; David C. Dudley, of Colorado Springs, in the State of Colorado; and John R. Dobyns, of Jackson, in the State of Mississippi, officers and members of the Convention of American Instructors of the Deaf, and their associates and successors, be, and they are hereby, incorporated and made a body politic and corporate in the District of Columbia, by the name of the "Convention of American Instructors of the Deaf," for the promotion of the education of the deaf on the broadest, most advanced, and practical lines, and by the name it may sue, plead, and be impleaded, in any court of law, or equity, and may use and have a common seal and change the same at pleasure.

SEC. 2. That the said corporation shall have the power to take and hold personal estate and such real estate as shall be necessary and proper for the promotion of the educational and benevolent purposes of said corporation, which shall not be divided among the members of the corporation, but shall descend to their successors for the promotion of the objects aforesaid.

SEC. 3. That said corporation shall have a constitution and regulations or bylaws and shall have the power to amend the same at pleasure: *Provided,* That such constitution and regulations or bylaws do not conflict with the laws of the United States or of any State.

SEC. 4. That said association may hold its meetings in such places as said incorporators shall determine and shall report to Congress, through the President of the Columbia Institution for the Deaf and Dumb* at Washington, District of Columbia, such portions of its proceedings and transactions as its officers shall deem to be of general public interest and value concerning the education of the deaf.

Approved, January 26, 1897.

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*Now named Gallaudet College.

MEETINGS OF THE CONVENTION OF AMERICAN INSTRUCTORS OF THE DEAF

First—New York, N.Y., August 28–30, 1850.
Second—Hartford, Conn., August 27–29, 1851.
Third—Columbus, Ohio, August 10–12, 1853.
Fourth—Staunton, Va., August 13–15, 1856.
Fifth—Jacksonville, Ill., August 10–12, 1858.
Sixth—Washington, D.C., May 12–16, 1868. (Also called the "First Conference of Superintendents and Principals of the American Schools for the Deaf.")
Seventh—Indianapolis, Ind., August 24–26, 1870.
Eighth—Belleville, Ontario, July 15–20, 1874.
Ninth—Columbus, Ohio, August 17–22, 1878.
Tenth—Jacksonville, Ill., August 26–30, 1882.
Eleventh—Berkeley, Calif., July 15–23, 1886.
Twelfth—New York, N.Y., August 23–27, 1890.
Thirteenth—Chicago, Ill., July 17, 19, 21, 24, 1893.
Fourteenth—Flint, Mich., July 2–8, 1895.
Fifteenth—Columbus, Ohio, July 28–August 2, 1898.
Sixteenth—Buffalo, N.Y., July 2–8, 1901.
Seventeenth—Morganton, N.C., July 8–13, 1905.
Eighteenth—Ogden, Utah, July 4–10, 1908.
Ninteenth—Delavan, Wis., July 6–13, 1911.
Twentieth—Staunton, Va., June 25–July 3, 1914.
Twenty-first—Hartford, Conn., June 20–July 3, 1917.
Twenty-second—Mount Airy, Pa., June 28–July 3, 1920.
Twenty-third—Belleville, Ontario, June 25–30, 1923.
Twenty-fourth—Council Bluffs, Iowa, June 29–July 4, 1925.
Twenty-fifth—Columbus, Ohio, June 27–July 1, 1927.
Twenty-sixth—Faribault, Minn., June 17–21, 1929.
Twenty-seventh—Winnipeg, Manitoba, June 22–26, 1931.
Twenty-eighth—West Trenton, N.J., June 18–23, 1933.
Twenty-ninth—Jacksonville, Ill., June 17–21, 1935.
Thirtieth—New York, N.Y., June 20–25, 1937.
Thirty-first—Berkeley, Calif., June 18–23, 1939.
Thirty-second—Fulton, Mo., June 23–27, 1941.
Thirty-third—St. Augustine, Fla., June 16–20, 1947.
Thirty-fourth—Jacksonville, Ill., June 19–24, 1949.
Thirty-fifth—Fulton, Mo., June 17–22, 1951.
Thirty-sixth—Vancouver, Wash., June 28–July 3, 1953.
Thirty-seventh—West Hartford, Conn., June 26–July 1, 1955.
Thirty-eighth—Knoxville, Tenn., June 23–28, 1957.
Thirty-ninth—Colorado Springs, Colo., June 28–July 3, 1959.
Fortieth—Salem, Oreg., June 25–30, 1961.
Forty-first—Washington, D.C., June 22–28, 1963.
Forty-second—Flint, Mich., June 21–25, 1965.
Forty-third—West Hartford, Conn., June 25–30, 1967.
Forty-fourth—Berkeley, Calif., June 21–27, 1969.
Forty-fifth—Little Rock, Ark., June 25–July 2, 1971.
Forty-sixth—Indianapolis, Ind., June 24–29, 1973.

LIST OF PRESIDENTS

1. Christopher Morgan, New York.
2. Thomas Day, Connecticut.
3. John W. Andrews, Ohio.
4. James H. Skinner, Virginia.
5. Rev. J. M. Sturtevant, Illinois.
6. Harvey P. Peet, New York.
7. Rev. Collins, Stone, Connecticut.
8. W. W. Turner, Connecticut.
9. Rev. Dr. A. L. Chapin, Wisconsin.
10. Edward Miner Gallaudet, District of Columbia.
11. Philip G. Gillett, Illinois.
12. Warring Wilkinson, California.
13. Philip G. Gillett, Illinois.
14. Wesley O. Connor, Georgia.

15–20. Edward Miner Gallaudet, District of Columbia.
21–23. Percival Hall, District of Columbia.

24. Newton F. Walker, South Carolina.
25. John W. Jones, Ohio.
26. Frank M. Driggs, Utah.
27. Elbert A. Gruver, Pennsylvania.
28. Thomas S. McAloney, Colorado.
29. Alvin E. Pope, New Jersey.
30. Harris Taylor, New York.
31. Ignatius Bjorlee, Maryland.
32. Elwood A. Stevenson, California.
33. Clarence J. Settles, Florida.
34. Leonard M. Elstad, District of Columbia.
35. Mrs. H. T. Poore (Ethel A.), Tennessee.
36. Daniel T. Cloud, New York.
37. Truman L. Ingle, Missouri.
38. James H. Galloway, New York.
39. Edward R. Abernathy, Ohio.
40. Richard G. Brill, California.
41. Roy M. Stelle, New York.
42. Lloyd A. Ambrosen, Maryland.
43. Stanley D. Roth, Kansas.
44. Marvin B. Clatterbuck, Oregon.
45. Kenneth R. Mangan, Illinois.
46. Armin G. Turechek, Colorado

OFFICERS OF THE CONVENTION OF AMERICAN INSTRUCTORS OF THE DEAF (1973–75), AND THE STANDING EXECUTIVE COMMITTEE

President.—Jack W. Brady, Atlanta Area School for the Deaf, Georgia.
President Elect.—Robert Davila, Gallaudet College, Washington, D.C.
First Vice-President.—Alfred J. Lamb, Indiana School for the Deaf.
Second Vice-President.—Winfield McChord, Kentucky School for the Deaf.
Secretary-Treasurer.—Gerald Burstein, California School for the Deaf, Riverside.

DIRECTORS

(The directors, with the officers, and the immediate past president, form the standing executive committee)

M. Martha Lutz, Missouri School for the Deaf.
William J. McConnell, Virginia School at Hampton.
Rosemary Hilke, Washington School for the Deaf.
Gary Olsen, Indiana School for the Deaf.
Frank Slater, Florida School for the Deaf.
Armin G. Turechek, Colorado School for the Deaf.

OFFICERS OF THE CONVENTION OF AMERICAN INSTRUCTORS OF THE DEAF (1971–73), AND THE STANDING EXECUTIVE COMMITTEE

President.—Armin G. Turechek, Colorado School for the Deaf.
President Elect.—Jack W. Brady, Kentucky School for the Deaf.
First Vice-President.—Robert T. Dawson, Florida School for the Deaf and Blind.
Second Vice-President.—Warren W. Fauth, California School for the Deaf, Riverside.
Secretary-Treasurer.—Gerald Burstein, California School for the Deaf, Riverside.

DIRECTORS

(The directors, with the officers, and the immediate past president, form the standing executive committee)

Paul Bird, Idaho State School for the Deaf and Blind.
Keith Lange, Oregon State School for the Deaf.
Edward Strieby, Wisconsin School for the Deaf.
M. Martha Lutz, Missouri School for the Deaf.
William J. McConnell, Virginia School at Hampton.
Kenneth Mangan, Illinois School for the Deaf.

CONSTITUTION OF THE CONVENTION OF AMERICAN INSTRUCTORS OF THE DEAF

ARTICLE I. NAME

This association shall be called the Convention of American Instructors of the Deaf.

ARTICLE II. OBJECTS

The objects of this association shall be:

First. To secure the harmonious union in one organization of all persons actually engaged in educating the deaf in America.

Second. To provide for general and local meetings of such persons from time to time, with a view of affording opportunities for a free interchange of views concerning methods and means of educating the deaf.

Third. To promote by the publication of reports, essays, and other writings, the education of the deaf on the broadest, most advanced, and practical lines in harmony with the sentiments and practice suggested by the following preamble and resolutions unanimously adopted by the Convention in 1886 at a meeting held in Berkeley, Calif.:

"Whereas the experience of many years in the instruction of the deaf has plainly shown that among members of this class of persons great differences exist in mental and physical conditions and in capacity for improvement, making results easily possible in certain cases which are practically and sometimes actually unattainable in others, these differences suggesting widely different treatment with different individuals: it is therefore

"*Resolved,* That the system of instruction existing at present in America commends itself to the world for the reason that its tendency is to include all known methods and expedients which have been found to be of value in the education of the deaf while it allows diversity and independence of action and work at the same time, harmoniously aiming at the attainment of an object common to all; and be it further

"*Resolved,* That earnest and persistent endeavors should be made in every school for the deaf to teach every pupil to speak and read from the lips, and that such efforts should be abandoned only when it is plainly evident that the measure of success attained does not justify the necessary amount of labor: *Provided,* That the children who are given to articulation teachers for trial should be given to teachers who are trained for the work, and not to novices, before saying that it is a failure: *And provided further,* That a general test be made and that those who are found to have sufficient hearing to distinguish sound shall be instructed orally."

Fourth. As an association to stand committed to no particular theory, method, or system, and adopting as its guide the following motto: "Any method for good results; all methods, and wedded to none."

ARTICLE III. MEMBERS

SECTION 1a. All persons actively and directly engaged in the education of the deaf in the United States and Canada may enjoy all the rights and privileges of membership in the association upon payment of the required fees and agreeing to this constitution.

SEC. 1b. Persons engaged in fields of endeavor closely related to the education of the deaf, and persons actively engaged in the education of the deaf in foreign countries, may become associate members of the association upon payment of the required fees and agreeing to the constitution.

SEC. 1c. "Associate members" shall enjoy all the rights and privileges of membership except those of voting and holding office.

SEC. 2. A member or former member of the association who has retired from active service may continue his membership with all the rights and privileges except those of holding office upon payment of the required fees and agreeing to this constitution. If such retired member of the Convention has 25 years of service to the education of the deaf, he may be granted an honorary membership by the executive committee, such membership does not include a subscription to the American Annals of the Deaf.

SEC. 3. Eligibility of applicants for membership shall be determined by the Standing Executive Committee and reported to the association.

SEC. 4. Each person joining the association shall pay annual dues as recommended by the Executive Committee and approved by the association.

SEC. 5. In addition to the annual dues, a registration fee shall be paid by each member registered at each regular meeting of the association. The amount of this fee shall be determined by the Standing Executive Committee Nonmembers attending the regular meetings of the association shall pay the required registration fee.

Sec. 6. As long as CAID operates a national office headed by an appointed Executive Secretary, applications for membership must be made to the Executive Secretary, who will receive all membership fees and dues. If there is a question about the eligibility of an applicant for membership, the Executive Secretary shall refer the application to the Standing Executive Committee. The Executive Secretary shall perform all the duties formerly assigned to the Treasurer. The Secretary-Treasurer shall retain membership on the Executive Committee and serve as Auditor. Should an Executive Secretary not be employed, the financial duties of the Executive Secretary will return to the Secretary-Treasurer and an Auditor will be appointed by the President.

ARTICLE IV. OFFICERS

SECTION 1. At each general meeting of the association there shall be elected by ballot a president-elect, first vice president, second vice president, secretary-treasurer. The first vice president who is elected at the 1967 meeting shall become president at the 1969 meeting. The president-elect who is elected at the 1969 meeting shall become president at the 1971 convention and each future president-elect shall become president at the conclusion of his term as president-elect. The association shall have five directors, at least three of whom shall be teachers. At the 1969 meeting two directors shall be elected for two year terms and three shall be elected for four year terms. At subsequent meetings vacancies shall be filled as the terms expire. With the immediate past president, these elected officers will form the Standing Executive Committee of the convention. They shall continue in office until the close of the convention program at which their successors are elected, and shall have power to fill vacancies occurring in their body between general meetings.

SEC. 2. The president, with the concurrence of the Executive Committee, shall designate such sections as seem advisable for the functioning of the association and shall appoint the section leaders thereof.

SEC. 3. The general management of the affairs of the association shall be in the hands of the Standing Executive Committee, subject to the provisions of such bylaws as the association shall see fit to adopt.

SEC. 4. All officers and members of committees must be active members of the association in regular standing.

SEC. 5. The Standing Executive Committee shall make a full report at each general meeting of all the operations of the association, including receipts and disbursements of funds, since preceding meeting.

ARTICLE V. MEETINGS

SECTION 1. General meetings of the association shall be held biennially, but the Standing Executive Committee may call other general meetings at their discretion.

SEC. 2. Local meetings may be convened as the Standing Executive Committee and the committees on local meetings shall determine.

SEC. 3. Proxies shall not be used at any meeting of the association, but they may be used in committee meetings.

SEC. 4. Notice of general meetings shall be given at least 4 months in advance and notice of local meetings at least 2 months in advance.

Sec. 5. The business of the association shall be transacted only at general meetings, and at such meetings 100 voting members of the association must be present to constitute a quorum.

ARTICLE VI

In the first election of officers held under the provisions of this constitution, said election occurring immediately after its adoption, all duly accredited active members of the 14th meeting of the Convention of American Instructors of the Deaf shall be entitled to vote, said members making payment of their membership fees to the treasurer at the earliest practicable opportunity after he shall have been elected.

ARTICLE VII. AMENDMENTS

This constitution may be amended by an affirmative vote of two-thirds of the members present at any general meeting of the association: *Provided,* That at such meeting at least 150 voting members of the association shall be present.

ARTICLE VIII

Devises and bequests may be worded as follows: "I give, devise, and bequeath to the Convention of American Instructors of the Deaf, for the promotion of the cause of the education of the deaf, in such manner as the Standing Executive Committee thereof may direct," etc.; and if there be any conditions, and "subject to the following conditions, to wit:".

MEMBERS OF THE CONVENTION OF AMERICAN INSTRUCTORS OF THE DEAF

Membership List 1973

Life Member.—Dr. Edward R. Abernathy, Columbus, Ohio.

A

Aasbo, Suzanne V., New York, N.Y.
Abbott, Carrie L., Austin, Tex.
Abbott, Virginia M., Ronkonkoma, N.Y.
Abbruzzese, Sister Carmela, Randolph, Mass.
Abernathy, Nelson M., Glen Alpine, N.C.
Abernathy, Sarah H., Colton, Calif.
Abernathy, Virginia, San Antonio, Tex.
Abijay, Azucena, Devils Lake, N. Dak.
Acheson, Jean F., Lafayette, Ind.
Achtzehn, James C., Jr., Syracuse, N.Y.
Ackerman, Rudolph A., San Bernardino, Calif.
Ackley, Robert S., Frederick, Md.
Acquard, Lorraine P., Kenmore, N.Y.
Acuna, Darlene, Tucson, Ariz.
Ada, Rosanna S., Agana, Guam
Adams, Barbara, Olathe, Kans.
Adams, David N., Jacksonville, Ill.
Adams, E. Frances, Chattanooga, Tenn.
Adams, Ellery J., Torrance, Calif.
Adams, F. Wayne, Lincoln, Nebr.
Adams, Kirk, Las Vegas, Nev.
Adams, Lorraine, Pittsburgh, Pa.
Adams, Lucille, Danville, Ky.
Adams, Margaret, San Antonio, Tex.
Adams, Paul, St. Augustine, Fla.
Adamson, Barbara, Brighton, Mass.
Adcock, Hal, Little Rock, Ark.
Adkins, Barbara K., North Liberty, Iowa
Adler, Gerald, Washington, D.C.
Adler, Janelle, Somerset, Ohio
Adler, Judith, Sioux Falls, S. Dak.
Adrian, Herbert J., Jr., Romney, W. Va.
Ahlstrom, Karen S., Fresno, Calif.
Aiken, Marian K., Romney, W. Va.
Ainbender, Hilary, Portland, Oreg.
Ainsworth, Phyllis E., Yarmouth, Maine
Akey, Phillis I., Ogden, Utah
Akin, E. Conley, Knoxville, Tenn.
Akin, Lucy, Knoxville, Tenn.
Akins, Juanita W., Raleigh, N.C.
Alber, Melda, Council Bluffs, Iowa
Albert, Dorothy W., Pittston, Pa.
Albert, Ellen E., Evanston, Ill.
Albright, Judith, Pittsburgh, Pa.
Albright, Michael, Greeley, Colo.
Alby, James F., West Allis, Wis.
Aldridge, Ann H., Morganton, N.C.
Aldridge, Lolita D., Newark, N.J.
Alexander, Alma, Baker, La.
Alexander, Doris, Franklin, Ind.
Alexander, Elaine, Knoxville, Tenn.
Alexander, Frances, Fulton, Mo.
Alexander, Jeneal M., Tucson, Ariz.
Alexander, Mildred L., Baker, La.
Alexander, Robert M., Tucson, Ariz.
Alford, Marydel S., St. Augustine, Fla.
Alfred, Doris R., Baton Rouge, La.
Alfund, William, Kings Park, N.Y.
Alicia, Carmen, Rochester, N.Y.
Allen, Miss Dale, Indianapolis, Ind.
Allen, Jane, San Antonio, Tex.
Allen, Kristina T., St. Augustine, Fla.
Allen, Norman K., Colorado Springs, Colo.
Allen, Rebecca Sue, Leitchfield, Ky.
Almasy, Jane, Pittsburgh, Pa.
Almer, Patricia, Vancouver, Wash.
Alpiner, Dr. Jerome G., Littleton, Colo.
Alsobrook, James V., St. Augustine, Fla.
Alt, Patricia E., Altavista, Va.
Alter, Ronald L., Orange, N.J.
Alter, Winona, Indianapolis, Ind.
Alvarez, Nellie A., Salem, Oreg.
Amann, Frank A., Rome, N.Y.
Amato, Linda, Frederick, Md.
Ambrose, William R., Athens, Ga.
Amon, Carol D., Evergreen, Colo.
Amos, Frances, Washington, D.C.
Anast, Mary P., Pittsburgh, Pa.
Andersen, Lloyd, Glen Cove, N.Y.
Andersen, Sandra, Sioux Falls, S. Dak.
Anderson, Barbara, Davenport, Iowa.
Anderson, Elouise H., Baton Rouge, La.
Anderson, James J., Kings Mountain, N.C.
Anderson, Janet, Jacksonville, Ill.
Anderson, Kathleen L., Wichita, Kans.
Anderson, Mary L., Glendale, Calif.
Anderson, Mary M., Jacksonville, Ill.
Anderson, Peter E., Salem, Oreg.
Anderson, Robert P., Jacksonville, Ill.
Anderson, Susan S., Decatur, Ga.
Anderson, Thelma, Los Angeles, Calif.
Anderson, Thomas B., Oxford, Ohio.
Andersson, Yerker, Washington, D.C.
Andrew, William H., Tucson, Ariz.
Andrews, Alice E., Morganton, N.C.
Andrews, Ann Gwyneth, Raleigh, N.C.

Andrues, Dr. James W., Portland, Oreg.
Anello, Francine R., Utica, N.Y.
Angel, Bettye W., Cave Spring, Ga.
Angel, Lynne I., Portland, Oreg.
Angel, Roberta, New York, N.Y.
Anken, John R., Verona, N.Y.
Annala, Linda V., Long Island City, N.Y.
Anselmo, Thomas, Colorado Springs, Colo.
Antill, Susan G., Pittsburgh, Pa.
Anton, Jeannette, Jacksonville, Ill.
Apodaca, Patricia, Las Vegas, Nev.
Appelman, Caren, Seattle, Wash.
Apple, Carol H., Morganton, N.C.
Aragon, Louis, Indianapolis, Ind.
Artbuthnot, Helen C., Oakland, Calif.
Archer, Ann B., Baltimore, Md.
Arellano, Angelina, Santa Fe, N. Mex.
Arensmeier, Wilma P., Salem, Oreg.
Arkelyan, Kathleen, Knoxville, Tenn.
Armstrong, Geraldine, W., Baton Rouge, La.
Armstrong, Julia W., Morganton, N.C.
Armstrong, Norma, Jacksonville, Ill.
Arney, Caroyn J., Morganton, N.C.
Arnold, Carol Ann, Laguna Beach, Calif.
Arnold, Floris, Downey, Calif.
Arnold, Geraldine, Romney, W. Va.
Arnold, Phyllis, San Antonio, Tex.
Arnold, Rhea V., Romney, W. Va.
Arrington, Rebecca, Tucson, Ariz.
Asbell, Abby, White Plains, N.Y.
Aschkenas, Judith, New York, N.Y.
Aseltine, Lorraine, Lombard, Ill.
Ashenden, Arthur L., White Plains, N.Y.
Ashford, Gary, Los Serranos, Calif.
Asklar, Francis J., Torrington, Conn.
Assid, Laurie, Colorado Springs, Colo.
Atchley, Teena, Whittier, Calif.
Atherton, Louise T., Spartanburg, S.C.
Athey, Judith H., Frederick, Md.
Atkins, Mary Jane, Jackson, Miss.
Atkinson, Catherine N., Baton Rouge, La.
Attanasio, Nancy Ralph, Hyde Park, N.Y.
Atterberry, Penny, Elgin, Ill.
Attletweed, Bernadette G., Oakland, Calif.
Attletweed, George, Oakland, Calif.
Aubrey, Gail J., Niagara Falls, N.Y.
Auerbach, Hortense, Washington, D.C.
Auerbach, Leon, Washington, D.C.
August, Mattie F., Dallas, Tex.
Austin, Leslie, Trenton, N.J.
Avery, Charlotte B., Pittsburgh, Pa.
Avery, Mildred, Jermyn, Pa.
Avola, Suzanne, Chicago, Ill.
Axelsen, Brenda, New York, N.Y.
Ayala Ray, Vancouver, Wash.
Ayers, Susie, Olathe, Kans.
Ayers, Sybil R., Spartanburg, S.C.

B

Baboff, Judith, Hempstead, N.Y.
Bacon, Jeanette Helen, Balboa Island, Calif.
Badamy, Joseph R., Rochester, N.Y.
Badoin, Thelma M., Baton Rouge, La.
Bagwell, Beth, Hyattsville, Md.
Bahl, Patricia, Omaha, Nebr.
Bailes, Carole L., Durham, N.C.
Bailey, Anita G., Dallas, Tex.
Bailey, Rev. Clark R., Oakland, Calif.
Bailey, David N., Indianapolis, Ind.
Bailey, Nancy, Indianapolis, Ind.
Bailey, Susan, Pittsburgh, Pa.
Baim, William, Oakland, Calif.
Baird, Marjorie, Milwaukee, Wis.
Baird, Terry J., Rockville, Md.
Baitty, Kathleen, Cheverly, Md.
Baker, Annette J., Washington, D.C.
Baker, Bernice S., Houston, Tex.
Baker, Celeste S. Baer, Pomona, Calif.
Baker, Dorothee A., Greenbelt, Md.
Baker, Francis L., Baton Rouge, La.
Baker, Mary, Bethesda, Md.
Baker, Mary V., Fulton, Mo.
Baker, Patricia, Knoxville, Tenn.
Baker, Robert, Villa Park, Ill.
Balas, Robert F., Alexandria, Va.
Balasa, Mary, Danville, Ky.
Baldridge, Kitty, Indianapolis, Ind.
Baldridge, Paul, Carmel, Ind.
Baldwin, Patricia A., Sulphur, Okla.
Balfour, Louis M., Chevy Chase, Md.
Ballard, Carolyn, Hobbs, N. Mex.
Ballou, Toby, Oklahoma City, Okla.
Baltzer, Susannah, Washington, D.C.
Bambach, Dorothy S., Scranton, Pa.
Bandy, Betty Baker, Alhambra, Calif.
Banisch, Sonia, Chino, Calif.
Banks, Mattie D., East Orange, N.J.
Bannister, Tom S., Greenville, S.C.
Banta, Harriett G., St. Augustine, Fla.
Banton, Ella May, APO, N.Y.
Baran, Loretta R., Erie, Pa.
Barbee, Margaret, Minneapolis, Minn.
Barber, E. Carl, Riverside, Calif.
Barber, E. Page, Riverside, Calif.
Barefield, Mary D., Austin, Tex.
Barger, Jean, Riverside, Calif.
Barham, Dorothy Jane, St. Augustine, Fla.
Barker, Barbara L., Riverside, Calif.
Barker, Jay A., Sandy, Utah
Barkuloo, Dr. Herbert W., Bellevue, Wash.
Barlow, Pauline, Austin, Tex.
Barlow, Virginia K., Dallas, Tex.
Bartz, Lettie L., Biloxi, Miss.
Barwick, Dorothea, Providence, R.I.
Basch, Peggy, Newtonville, Mass.
Basnett, Lanola, Fulton, Mo.
Batchelder, Patricia M., Riverside, Calif.

Bateman, Gerald, Byron. N.Y.
Bates, Joanne, Council Bluffs, Iowa
Bathory, Connie Jo, Baltimore, Md.
Batshaw, Marilyn, Rahway, N.J.
Batt, Sister Doris, Lake Ronkonkoma, N.Y.
Battin, Dorothy, Pennington, N.J.
Battison, Robbin, LaJolla, Calif.
Battle, Edna, Knoxville, Tenn.
Battle, Mildred H., Raleigh, N.C.
Battle, Raymond N., Knoxville, Tenn.
Battles, Laura J., Wauwatosa, Wis.
Baughman, Robert T., Stanford, Ky.
Baum, Clarice M., St. Louis, Mo.
Bauman, Glen, Gooding, Idaho
Baumbach, Nancy, Tucson, Ariz.
Baume, Nancy, Indianapolis, Ind.
Baumstark, Barbara S., Pt. Mugu, Calif.
Barner, John C., Schenectady, N.Y.
Barnes, Connie B., Talladega, Ala.
Barnes, George E., Rochester, N.Y.
Barnes, Marjorie, Fulton, Mo.
Barnes, Nelda K., Spartanburg, S.C.
Barnett, Mary Ann, Hannibal, Mo.
Barnett, Mary, Baton Rouge, La.
Barnett, David, Indianapolis, Ind.
Barnhardt, Carol A., Fairbanks, Alaska
Barnhill, Sandra, Washington, D.C.
Baron, Drew J., Clarkston, Ga.
Barr, Barbara W., Charleston, W. Va.
Barr, Marilyn, Riverside, Calif.
Barr, Paul E., Jr., Frederick, Md.
Barr, Paul E., Sr., Charlestown, W. Va.
Barrett, Anna Marie, Buffalo, N.Y.
Barron, Roy F., Council Bluffs, Iowa
Barrows, Orpha T., Colorado Springs, Colo.
Barry, Sharon, Olean, N.Y.
Barry, Sister Virginia, Ronkonkoma, N.Y.
Bartholomey, Gillis, Little Rock, Ark.
Bartlett, Linda T., Dallas, Tex.
Batstone, Gary W., Winnipeg, Manitoba, Canada
Bavister, Mary, Washington, D.C.
Bay, Susan J., Fairport, N.Y.
Baynes, Ronald, Talladega, Ala.
Beach, Gail G., Morganton, N.C.
Beachum, Gayle M., Waxahachie, Tex.
Beaird, Catherine, Cave Spring, Ga.
Beal, Cynthia C., Pittsburgh, Pa.
Beal, Marjory B., Arvada, Colo.
Beale, Jean W., Las Vegas, Nev.
Beam, Norman, Talladega, Ala.
Beardsley, Alice B., Scottsville, N.Y.
Bearer, Paulette, Trenton, N.J.
Beasley, Dr. Edward E., Washington, D.C.
Beaver, Ethel M., Columbus, Ohio
Beaver, Larry, Olathe, Kans.
Beaver, Stephany, Olathe, Kans.
Beavert, Dennis, Little Rock, Ark.
Bechtel, Robin B., Athens, Ohio
Beck, Marilyn, Fulton, Mo.
Beck, Ruth G., Bayside Hills, N.Y.
Beck, Stephanie, Riverside, Calif.
Becker, Bruce, Omaha, Nebr.
Becker, Glenda K., Jacksonville, Ill.
Beckmeyer, Theodore, Snohomish, Wash.
Beem, Margaret, St. Augustine, Fla.
Beers, Carlton, Council Bluffs, Iowa
Beggs, Dr. Barbara A., Dallas, Tex.
Begin, Paul A., Tulare, Calif.
Beglin, Margaret, Rochester, N.Y.
Behre, Sister Ann, Brooklyn, N.Y.
Behrens, Dr. Thomas R., Arlington, Va.
Bek, Rev. Herbert, Bellaire, Tex.
Belcher, Duane L., Danville, Ky.
Belcher, Janet A., Canoga Park, Calif.
Belcher, Judith A., Wilmore, Ky.
Belding, Don, Riverside, Calif.
Bell, Bobbie J., Riverside, Calif.
Bellefleur, Karen, Philadelphia, Pa.
Bellefleur, Dr. Philip, Philadelphia, Pa.
Belser, George, Vancouver, Wash.
Benedetto, Joseph, Metarie, La.
Benedict, Dorothy, Northampton, Mass.
Benfield, Mary Louise H., Glen Alpine, N.C.
Bennett, Dennis W., St. Augustine, Fla.
Bennett, Elizabeth, Shawnee Mission, Kans.
Bennett, Elizabeth Ann, Santa Fe, N. Mex.
Bennett, Jean R., Simi Valley, Calif.
Benowitz, Marceille, Rochester, N.Y.
Benowitz, Stanley, Rochester, N.Y.
Benson, Marcia N., West Orange, N.J.
Benson, Marie L., Flemington, N.J.
Benson, Mary A., Frederick, Md.
Bent, Michael T., Cheektowaga, N.Y.
Bentley, Mrs. Tommie, Lubbock, Tex.
Benton, Lanelle, Cave Spring, Ga.
Benton, Nancy, Sioux Falls, S. Dak.
Betz, Hyalmar, Cave Spring, Ga.
Beranek, Junior B., Jacksonville, Ill.
Berg, Thomas, Washington, D.C.
Bergan, Robert L., Silver Spring, Md.
Berger, Shirley L., Parsons, Kans.
Bergin, Rev. Robert D., West Hartford, Conn.
Bergman, Eugene, Washington, D.C.
Bergman, Julie, West Linn, Oreg.
Bergquist, Anna T., Colorado Springs, Colo.
Bergstresser, Henry R., Washington, D.C.
Bergstrom, Dagny, Williams Bay, Wis.
Berhow, Martha H., Vancouver, Wash.
Berke, Albert, West Hartford, Conn.
Berlow, Susan, Chicago, Ill.
Bernard, Eleanor C., Tucson, Ariz.
Bernauer, James A., Pittsburgh, Pa.
Bernsen, Elaine, Fullerton, Calif.
Bernstein, Seymour S., Riverside, Calif.
Bernstone, Alyce, Brooklyn, N.Y.
Berry, Judy S., Hildebran, N.C.
Berry, Mary Elizabeth, Columbus, Ga.

Berry, Sharon R., Portsmouth, Va.
Besley, Lucy Puryear, Danville, Ky.
Beson, Susan K., Grand Blanc, Mich.
Best, Barbara, Minneapolis, Minn.
Best, Diane, Chicago, Ill.
Best, Faye, Danville, Ky.
Best, Joyce E., Greeley, Colo.
Bevan, Richard C., Holland, Pa.
Biddle, Karen, Finleyville, Pa.
Biggerstaff, Shirley, Olathe, Kans.
Bigham, Meta H., Morganton, N.C.
Bilbow, Patrice, Pittston, Pa.
Billings, Ella H., Morganton, N.C.
Binder, Doris, Glen Cove, N.Y.
Bingeman, Colleen, Indianapolis, Ind.
Binnie, Carl A., West Lafayette, Ind.
Birch, Jane B., Pittsburgh, Pa.
Bird, Margaret P., Austin, Tex.
Bird, Martha, Gooding, Idaho.
Bird, Paul, Gooding, Idaho
Birdsell, Ben A., Hartford, Conn.
Bishop, Alnora P., San Diego, Calif.
Bishop, Charlene W., Baton Rouge, La.
Bissell, Joan, Battleground, Wash.
Bitske, Edward, Danville, Ky.
Bittner, Susan G., St. Augustine, Fla.
Bjorlie, Henry O., Rome, N.Y.
Black, Darlene, New Hope, Minn.
Black, Frances, Little Rock, Ark.
Black, Louise, Staunton, Va.
Black, Mary L., Glen Alpine, N.C.
Black, Mildred, Spartanburg, S.C.
Blackburn, Earline K., Austin, Tex.
Blackburn, Nancy, Staunton, Va.
Blackburn, William W., Austin, Tex.
Blackman, Laurie, Napa, Calif.
Blackmer, Gary, Delavan, Wis.
Bladdy, Charlen L., Lincolnwood, Ill.
Blair, James A., Kalamazoo, Mich.
Blair, Mary A., Lansing, Mich.
Blake, Anita E., Tucson, Ariz.
Blake, Florence, Bronx, N.Y.
Blakesley, Lillian E., Hot Springs, Ark.
Blanchard, Janet, Port Allen, La.
Blatt, Mary Judith, Pittsburgh, Pa.
Blattner, Evangeline, Fulton, Mo.
Blaustein, Janet, Fort Lee, N.J.
Bledsoe, Neal, Tucson, Ariz.
Bleeker, Susan F., New York, N.Y.
Bleesz, Paul M., Frederick, Md.
Bleifuss, Mary Ellen, Fulton, Mo.
Blesse, Rosemary, Jacksonville, Ill.
Blethen, Laura, Richmond, Calif.
Blevins, Bill G., Northhampton, Mass.
Bloker, Paula K., Weston, Oreg.
Blue, Mrs. Burnell, Little Rock, Ark.
Blum, Mary, Spartanburg, S.C.
Bodner, Barbara Ann, Syracuse, N.Y.
Boehmke, Sharon, Brooklyn, N.Y.
Boelio, Joanna B., Royal Oak, Mich.
Boese, Delia, Milwaukee, Wis.
Boesen, Kelly W., West Hartford, Conn.
Bogan, Kathleen, Buffalo, N.Y.
Bohn, Efton L., Riverside, Calif.
Bolen, Sandrasue, Riverside, Calif.
Boles, Virginia A., Baton Rouge, La.
Bolesta, Ethel M., Tampa, Fla.
Boley, Louis M., Romney, W. Va.
Boley, Marjorie L., Romney, W. Va.
Boling, Edgar, Alexandria, Va.
Boling, LaNelle, El Paso, Tex.
Boling, Malinda A., San Antonio, Tex.
Bolton, Carol J., Lakewood, Colo.
Boltz, Robert H., Baton Rouge, La.
Bonadio, Diane, Wilkes-Barre, Pa.
Bonar, Patricia, Burlington, W. Va.
Bond, Albert, Reseda, Calif.
Bonds, James D., Jacksonville, Fla.
Bonito, Antonio, St. Augustine, Fla.
Bontrager, Robert D., Salem, Oreg.
Boone, Janiece, Santa Fe, N. Mex.
Boose, Grace V., Trenton, N.J.
Booth, Bonnie-Jeanne, St. Augustine, Fla.
Bordelon, Diane H., Baton Rouge, La.
Borden, Mary Sue, Gooding, Idaho
Bordman, Marcia B., Washington, D.C.
Borggaard, Virginia C., Frederick, Md.
Borron, Roberta A., Austin, Tex.
Bosch, Audrey, Fulton, Mo.
Bosler, Ronald J., Kansas City, Mo.
Boston, Inez H., Baton Rouge, La.
Bosworth, Margaret W., Pasadena, Md.
Bothwell, Hazel, Jacksonville, Ill.
Bottini, Elizabeth, Rome, N.Y.
Bottlinger, Wayne C., S. Burnaby, B.C., Canada
Bouchard, Evadna, Pittsford, N.Y.
Bounds, Laura F., Mobile, Ala.
Bourret, Tarrell W., Normal, Ill.
Bouvet, Leticia C., Santa Fe, N. Mex.
Bowe, Frank, New York, N.Y.
Bower, Terri S., Tucson, Ariz.
Bowers, Leslie, Spencerport, N.Y.
Bowling, Wallace L., Portland, Maine
Bowman, Donald Carl, Landover Hills, Md.
Bowman, Lenora J., Coral Hills, Md.
Bowns, Barbara A., Arlington, Va.
Box, Mattie, Fort Worth, Tex.
Boyce, Mary L., Una, S.C.
Boyd, Barbara, Indianapolis, Ind.
Boyd, Dr. John, London, Ont., Canada
Boyd, S. Jack, Amherst, N.S., Canada
Boyer, Nyda C., Riverside, Calif.
Boyett, Jodeane, Lubbock, Tex.
Boyle, Elizabeth, Detroit, Mich.
Boze, Charlotte Y., Springfield, Ohio
Bracewell, Melody, Cave Spring, Ga.
Bradfield, Patricia A., Los Angeles, Calif.
Bradford, Cathy, Roff, Okla.
Bradford, Mrs. D. K., Boone, N.C.
Bradford, Mrs. Don, Santa Fe, N. Mex.
Bradford, Erelene L., Baton Rouge, La.
Bradford, W. L., Baton Rouge, La.
Bradley, Helen, Glens Falls, N.Y.
Bradley, Maryellen, Brooklyn, N.Y.
Bradley, Ruth C., Jacksonville, Fla.
Bradley, Sandra, Piedmont, Calif.

Bradshaw, Daniel G., Florissant, Mo.
Bradshaw, John W., Danville, Va.
Bradshaw, Norma B., Riverside, Calif.
Brady, Jack W., Atlanta, Ga.
Brady, Lorraine, Rillito, Ariz.
Brady, Patricia A., Chappaqua, N.Y.
Bragner, William E., Beverly, Mass.
Bragner, Josephine E., Topsfield, Mass.
Branch, Hattie L., Hampton, Va.
Braniger, Harley W., Monmouth, Oreg.
Branson, Virginia M., Gettysburg, Pa.
Brasel, Barbara B., West Hartford, Conn.
Brasel, Kenneth E., West Hartford, Conn.
Brasel, Mr. M., Faribault, Minn.
Brasell, Harold K., Portales, N. Mex.
Braucht, Patricia, Philadelphia, Pa.
Braun, Elizabeth, Pittsburgh, Pa.
Bray, Elvira, Cave Spring, Ga.
Breard, Ann M., Owosso, Mich.
Brearly, Mary Kate, Columbia, S.C.
Breckenridge, Nancy, Fresno, Calif.
Breece, Jefferson T., Seattle, Wash.
Breeden, Carolyn, Lenexa, Kans.
Breitwieser, Joseph V., Napa, Calif.
Brelje, Dr. H. William, Portland, Oreg.
Brendan, Sister Ann, Brooklyn, N.Y.
Brendle, Josephine M., Drexel, N.C.
Brenton, Carolyn, Glenwood, Iowa
Brenton, Marion, Whitewater, Wis.
Bresnahan, Jane, Omaha, Nebr.
Brewer, M. Virginia, Jacksonville, Ill.
Brice, Larry, Evansville, Ind.
Brick, Lawrence J., Jacksonville, Ill.
Bridges, John S., Hildebran, N.C.
Bridges, Ruth C., Morganton, N.C.
Bridges, Sharon L., Jackson, Miss.
Bridges, Trisha T., Dallas, Tex.
Bright, Anne O., Romney, W. Va.
Brightwell, Thomas, Omaha, Nebr.
Brill, Dr. Richard G., Riverside, Calif.
Brin, Andrea, New York, N.Y.
Bringer, Stanton J., Concord, Calif.
Briningstool, Carl D., Austin, Tex.
Brittain, Fonda K., Hickory, N.C.
Brock, Opal, Nevada, Mo.
Brody, Barbara, Chicago, Ill.
Broecker, Clarence, Jr., Austin, Tex.
Brooke, Gladys A., West Hartford, Conn.
Brooks, Betty, Rochester, N.Y.
Brooks, Frances S., Centerville, Pa.
Brooks, Mildred, Rochester, N.Y.
Brooks, Shari S., Tallahassee, Fla.
Broome, Edward L., Chatsworth, Calif.
Brouillette, Susan, Milwaukee, Wis.
Broussard, Herman, St. Augustine, Fla.
Broussard, Patricia, St. Augustine, Fla.
Brouwer, Jean M., Chicago, Ill.
Brown, Bernard P., West Hartford, Conn.
Brown, Dr. Donald W., Silver Spring, Md.
Brown, Esther D., Houston, Tex.
Brown, George K., Morganton, N.C.
Brown, Herschel, Roebuck, S.C.
Brown, Ken, Sulphur, Okla.
Brown, Lou D., Washington, D.C.
Brown, McKay, Staunton, Va.
Brown, Marilyn O., West Hartford, Conn.
Brown, Myra J., Morganton, N.C.
Brown, Nan, Swoop, Va.
Brown, Nancy G., New York, N.Y.
Brown, Norman, Indianapolis, Ind.
Brown, Pauline, Benton, Ark.
Brown, Robert E., Sioux Falls, S. Dak.
Brown, Dr. Robert S., Jackson, Miss.
Brown, Ruth F., Santa Fe, N. Mex.
Brown, Sandra G., Ellicott City, Md.
Brown, Shirley R., Overland Park, Kans.
Browning, Ruth D., Louisville, Ky.
Broyles, Elizabeth, Virginia Beach, Va.
Bruce, Mrs. Barry B., Houston, Tex.
Bruce, Wallace, Portland, Oreg.
Brueggeman, Dorothy, Parsons, Kans.
Brumfield, Shannon, New Orleans, La.
Brunjes, Adele, Oyster Bay, N.Y.
Bruns, Karen, Austin, Tex.
Brunsen, Judith, Lincoln, Nebr.
Bruster, Alice F., Roff, Okla.
Bryan, Elizabeth, Indianapolis, Ind.
Bryan, Frank, Laurel, Md.
Bryant, Frank W., Cave Spring, Ga.
Bryant, Goldie S., Spartanburg, S.C.
Bryant, Jerry, Wilson, N.C.
Bryant, Katie B., Baton Rouge, La.
Bryant, Patricia A., Hingham, Mass.
Bryant, Vireginer, Atlanta, Ga.
Bucceri, MaryAnn, Johnstown, Pa.
Buchanan, Alice H., San Jose, Calif.
Buchbinder, Jean, Cheektowaga, N.Y.
Buchmann, Adella, Olathe, Kans.
Buck, Frank A., Lafayette, Calif.
Buffington, Jo Beth, Spartanburg, S.C.
Bugden, Sister M. Bridgett, San Antonio, Tex.
Bugen, Claire M., Columbia, Mo.
Bulba, Lorraine, Bloomfield, Conn.
Bulger, Anna B., South Portland, Maine.
Bull, Rev. Thomas M., Alexandria, Va.
Bullock, Donald, Concord, Calif.
Bunch, Gary, Belleville, Ontario, Canada.
Bunker, Charles F., Downey, Calif.
Burco, Mary Ellen, Vancouver, Wash.
Burdett, Kenneth, Ogden, Utah
Burgerhout, Barbara, Puyallup, Wash.
Burianek, Lynn, Pueblo, Colo.
Burke, Beatrice, Park Ridge, Ill.
Burke, Harry C., Flint, Mich.
Burke, Mary, Tonawanda, N.Y.
Burke, Rosemary M., Pittsburgh, Pa.
Burke, Sandra, Austin, Tex.
Burke, Susan, Seaford, N.Y.
Burley, Marvin M., Jr., Wilson, N.C.
Burley, Sally A., Wilson, N.C.
Burlingame, Sharon Smith, Rochester, N.Y.
Burnett, Eugenia, Jackson, Miss.
Burnley, Donna W., Danville, Ky.

Burnes, Catherine, Little Rock, Ark.
Burnes, Dan, Watertown, Mass.
Burns, Cynthia C., Sacramento, Calif.
Burns, Frances G., Chicago, Ill.
Burns, Gladyce, Devils Lake, N. Dak.
Burns, Sister Mary Agatha, Perry, N.Y.
Burns, Mary Ann, Grandview, Mo.
Burrell, Jeannette, Tucson, Ariz.
Burroughs, Dr. Judith R., Dallas, Tex.
Burstein, Gerald, Riverside, Calif.
Burt, Donna G., New Britain, Conn.
Burton, C. A., Washington, D.C.
Burton, Louise F., Talladega, Ala.
Busby, Carolyn M., Milwaukee, Wis.
Busby, Howard R., Parsons, Kans.
Busch, Carol P., Overland Park, Kans.
Busenbark, Lynn, Omaha, Nebr.
Bushey, Norma M., Morganton, N.C.
Butkus, Marie M., Morganton, N.C.
Butler, Gloria C., Roebuck, S.C.
Butler, Gerald D., Austin, Tex.
Butler, Dr. John W., Dallas, Tex.
Butler, Judy, Knoxville, Tenn.
Butler, Margo J., Salt Lake City, Utah
Butler, Marguerite, St. Augustine, Fla.
Butler, Raymond, St. Augustine, Fla.
Butler, Susan E., New York, N.Y.
Buttrill, Jane, Annapolis, Md.
Buttz, Pamela F., Mt. Zion, Ill.
Buzanowski, Rev. Donald J., Green Bay, Wis.
Buzzard, Henry, Peekskill, N.Y.
Byers, Lois, Evanston, Ill.
Byers, Marilyn S., Sterling, Ill.
Bynum, Donald F., Charlotte, N.C.
Byron, Minnie, Columbus, Ohio

C

Cabbage, Nelly, Gooding, Idaho
Caccamise, Frank, Houston, Tex.
Cagan, Janice L., Brookline, Mass.
Caldwell, Doris, New Carrollton, Md.
Caldwell, Elizabeth H., Seattle, Wash.
Caldwell, Golda E., Austin, Tex.
Calhoon, James R., Spartanburg, S.C.
Call, Michaele, Alameda, Calif.
Camenisch, Franna, Austin, Tex.
Camenisch, Walter, Austin, Tex.
Cameron, Lynn S., Unionville, Calif.
Cameron, Julie Jane, Rochester, N.Y.
Camoia, Rosemary, Brooklyn, N.Y.
Campbell, Don R., Yucaipa, Calif.
Campbell, Linda, Tucson, Ariz.
Campbell, Margaret, Indianapolis, Ind.
Campbell, William D., Jr., Morganton, N.C.
Camporeale, Ann Louise, Brooklyn, N.Y.
Canada, Nanina, Indianapolis, Ind.
Cancro, George P., N. Tarrytown, N.Y.
Cannon, Sally, Palo Alto, Calif.
Cantrell, Byron, Cave Spring, Ga.
Cantrell, Kathleen, Cave Spring, Ga.
Canty, Linda, Indianapolis, Ind.
Capano, Dr. Richard, Saratoga, Calif.
Capato, Dorothy A., Ventura, Calif.
Capilouto, Janice, Atlanta, Ga.
Caple, John L., Cave Spring, Ga.
Cappel, Guy, Indianapolis, Ind.
Capps, Elizabeth S., Jacksonville, Ill.
Capps, Rosemary, Sausalito, Calif.
Carben, Evelyn, Butler, Pa.
Cardinal, A. Alane, Rochester, N.Y.
Cardosi, Carol A., Brooklyn, N.Y.
Caridi, Elaine M., Lindenhurst, N.Y.
Carl, Betty Jane, Ferndale, Mich.
Carlson, Bettie, Sioux Falls, S. Dak.
Carlson, David, Sioux Falls, S. Dak.
Carlson, Helen Marie, San Bernardino, Calif.
Carlson, Linda F., Essex, Mass.
Carlstrand, Glen, Dallas, Tex.
Carlton, Elizabeth, Dallas, Tex.
Carlton, J. Raymond, Staunton, Va.
Carney, Barbara, Washington, D.C.
Carney, R. John, Columbia, S.C.
Carpenter, Douglas H., North Ogden, Utah
Carr, Agnes H., Jacksonville, Ill.
Carr, Albert, Kansas City, Kans.
Carr, Dr. Josephine, Salem, Oreg.
Carr, June, Milwaukee, Wis.
Carr, Margaret, Knoxville, Tenn.
Carr, Virginia L., West Hartford, Conn.
Carrithers, Winifred L., Omaha, Nebr.
Carroll, Barbara A., Baldwin, N.Y.
Carroll, Karen Stifft, Richmond, Va.
Carroll, Sister Patricia, Brooklyn, N.Y.
Carson, Mary Ellen, Jacksonville, Ill.
Carson, Roy, Fulton, Mo.
Carstens, Rev. David, Connelly Springs, N.C.
Carter, Carlota, St. Augustine, Fla.
Carter, Donna Hall, Memphis, Tenn.
Carter, Janet D., Knoxville, Tenn.
Carter, Sister Marie de Paul, Buffalo, N.Y.
Carter, Mark W., Union Grove, Wis.
Carter, Paul Thomas, Lindale, Ga.
Carter, Sharon, Faribault, Minn.
Carter, Virginia, Tucson, Ariz.
Carter, W. Melvin, Jr., Faribault, Minn.
Caruso, Mary D., Pittsburgh, Pa.
Casella, Vickie, Los Angeles, Calif.
Casey, Dondra, Cave Spring, Ga.
Casey, Eunice W., Fairbanks, Alaska
Casey, Katherine, Cave Spring, Ga.
Cashier, Barbara, Bronx, N.Y.
Casillo, Mary L., Pittsburgh, Pa.
Cassetti, Edmond D., Wethersfield, Conn.
Castle, Dr. William E., Penfield, N.Y.
Castro, Cristina, Watertown, Mass.
Catalano, Russell, Croton-on-Hudson, N.Y.
Cather, Patricia L., San Antonio, Tex.
Catto, Ruth, Pauline, S.C.
Causby, Judy A., Connelly Springs, N.C.
Cavanaugh, Susan, Omaha, Nebr.
Cenci, Mary Beth M., Newington, Conn.
Cepelak, Linda, Mill Neck, N.Y.

Cerasa, Alice, New York, N.Y.
Ceraso, Louis, Niagara Falls, N.Y.
Chaben, Susan, Chicago, Ill.
Chai, Arden M., San Francisco, Calif.
Chaifetz, Dana Sue, West Hartford, Conn.
Chalk, Vincent L., Riverside, Calif.
Chance, Paula, Jacksonville, Ill.
Chandler, Shirley F., Baltimore, Md.
Chann, Henry, Fairfield, Calif.
Chapman, Jesse P., III, Jacksonville, Ill.
Chapman, Judy H., Gastonia, N.C.
Chapman, Keith, University, Ala.
Chapman, Mildred, Baton Rouge, La.
Charapp, Abbylee, Pittsburgh, Pa.
Charlton, Ella, Pittsburgh, Pa.
Chase, Marlaine K., Evansville, Ind.
Chatman, Amanda E., Rome, N.Y.
Chavez, Cassandra, Danboro, Pa.
Cheraso, Samuel C., Portland, Maine
Chevallier, Ada M., Frederick, Md.
Childers, Eric R., San Antonio, Tex.
Childress, Susan, New Orleans, La.
Childs, Margaret Z., Austin, Tex.
Chinn, Coleen, Seattle, Wash.
Chletcos, Theresa A., Philadelphia, Pa.
Chopin, Joan, San Carlos, Calif.
Choy, Margaret Eunice, Honolulu, Hawaii
Christiansen, Ferne, Council Bluffs, Iowa
Christie, Martha G., Rochester, N.Y.
Christopulos, Tony, Ogden, Utah
Chubb, Louise B., Cave Spring, Ga.
Church, Gaye, New York, N.Y.
Churchill, LeAnne, Dallas, Tex.
Chwalow, Esther B., Bala Cynwyd, Pa.
Cieslar, Alicia, Champaign, Ill.
Cindrich, Mary L., Royal Oak, Mich.
Clack, Leland, Hyattsville, Md.
Clapp, Natalie, Fulton, Mo.
Clarcq, Dr. Jack, Victor, N.Y.
Clark, Bea L., Dallas, Tex.
Clark, Deborah P., Frederick, Md.
Clark, Dorothea, Fulton, Mo.
Clark, Dorothy, Flint, Mich.
Clark, Edwina, Stonewall, Okla.
Clark, Kenneth E., Olathe, Kans.
Clark, Mary A., Knoxville, Tenn.
Clark, Mary Bell, Staunton, Va.
Clark, Terrell A., West Hartford, Conn.
Clark, Thomas C., Logan, Utah
Clarke, David A., Corvallis, Oreg.
Clarke, Gordon W., West Hartford. Conn.
Clarke, Joanne, Cave Spring, Ga.
Clatterbuck, Dr. Marvin B., Salem, Oreg.
Claytor, Harriett B., Hampton, Va.
Cleary, Daniel A., Tucson, Ariz.
Cleary, Florence, Ronkonkoma, N.Y.
Cleary, John, Croton-on-Hudson, N.Y.
Cleary, Mary T., Bellerose, N.Y.
Cleary, Paul G., East Hartford, Conn.
Clemens, Kenneth, Concord, Calif.
Clement, Annette Morris, Marina Del Ray, Calif.
Clement, Susan Lynn, Staunton, Va.
Clements, Edward E., Jacksonville, Ill.
Clements, Fay M., Houston, Tex.
Clements, Julianne W., Jacksonville, Ill.
Clevenger, Dr. Ima, Rio Piedras, Puerto Rico
Clinard, Betty, Cheverly, Md.
Clingenpeel, Robert, Santa Fe, N. Mex.
Clontz, Martha, Gooding, Idaho
Clouser, Richard A., University Park, Pa.
Clugston, Judith, Dallas, Tex.
Coakley, Joann D., Oakland, Calif.
Cobb, Margaret Ann, Dallas, Tex.
Cobb, Regina, Knoxville, Tenn.
Cody, Janet G., Danville, Ky.
Coen, Karen, Brighton, Mich.
Coffey, Willian E., Danville, Ky.
Cohen, Marcy E., Los Angeles, Calif.
Cohen, Rose, Riverdale, N.Y.
Cohen, Roslyn, Fairlawn, N.J.
Cohick, Candy, Virginia Beach, Va.
Cohl, Rona S., Sacramento, Calif.
Cohn, Paula, Chicago, Ill.
Cohrs, Christine, Oakland, Calif.
Colasuonno, Thomas, Bronx, N.Y.
Cole, Christine A., Seattle, Wash.
Cole, Lois, Council Bluffs, Iowa
Cole, Norma, Council Bluffs, Iowa
Coleman, Joyce, Knoxville, Tenn.
Coleman, Julia, Spartanburg, S.C.
Coleman, Lynn C., Frederick, Md.
Coleman, Mildred, Spartanburg, S.C.
Colin, Susanna M., Los Angeles, Calif.
Coll, Mary Belle, Olathe, Kans.
Collier, Billie, Olathe, Kans.
Collier, Mrs. Thomas, III, Jackson, Miss.
Collins, Elizabeth K., Danville, Ky.
Collins, Gail L., Seaford, Del.
Collins, George, Council Bluffs, Iowa
Collins, Dr. James L., Columbus, Ohio
Collins, Jane, Yardley, Pa.
Collins, Sister Thomas Mary, Oakland, Calif.
Collis, June H., St. Petersburg, Fla.
Colonia, Constance, Portland, Oreg.
Colton, Paul M., Huntington Beach, Calif.
Colton, Sandra L., Newington, Conn.
Comasky, Al E., Covina, Calif.
Combee, Ladre K., Rome, Ga.
Combs, Wilma C., Imperial Beach, Calif.
Comeforo, Jean E., Flemington, N.J.
Comin, Constance, Schuykill Haven, Pa.
Compton, Patricia T., Lake Oswego, Oreg.
Conboy, Rev. Richard L., Pittsburgh, Pa.
Condon, Helene R., Trenton, N.Y.
Conklin, Cara, Faribault, Minn.
Conley, Charlotte H., Morganton, N.C.
Conley, Janet Ellen, Gettysburg, Pa.
Conlon, Sara E., Tallahassee, Fla.

Conner, Janet L., Los Angeles, Calif.
Conner, Karen, Rochester, N.Y.
Connolly, R. Perry, New Britain, Conn.
Connolly, Thomas, Henrietta, N.Y.
Connor, Florence, Tucson, Ariz.
Connor, Marcella, Omaha, Nebr.
Connors, Sister Phyllis, Buffalo, N.Y.
Conti, Richard A., Valhalla, N.Y.
Conway, Sister Ann, Randolph, Mass.
Conway, Jeanne, Washington, D.C.
Cook, Beverly, Riverside, Calif.
Cook, Chris, Tuscola, Ill.
Cook, James, Little Rock, Ark.
Cook, Laura M., St. Augustine, Fla.
Cooke, Catherine, Dallas, Tex.
Cooke, Richard S., East Orange, N.J.
Cooper, Kay, Charlotte, N.C.
Cooper, Patricia, Muncie, Ind.
Cooper, Wendy T., Hollis, N.Y.
Copenhaver, Evelyn, Morganton, N.C.
Copeland, Sister Marie Estelle, Pittsburgh, Pa.
Copperud, Damaris, Berkeley, Calif.
Copple, Maris, Seattle, Wash.
Corbett, Edward Jr., Baton Rouge, La.
Corbett, Harriett, Allison Park, Pa.
Corbett, Marcia, Baton Rouge, La.
Cordano, Waldo T., Delavan, Wis.
Corder, Louise, Jacksonville, Ill.
Coretti, Marie, Portland, Maine
Corey, Winifred C., Ottawa, Ontario, Canada
Corfield, Joan, Santa Ana, Calif.
Coriale, Rose, Utica, N.Y.
Corliss, Pauline D., Los Angeles, Calif.
Cornett, R. Orin, Laurel, Md.
Correu, Lawrence, Richmond, Va.
Corson, Harvey Jay, Cincinnati, Ohio
Corson, Mark Alan, Northridge, Calif.
Cortez, Cathleen, Woodside, N.Y.
Corwin, Judith, Washington, D.C.
Costello, David, Dixon, Ill.
Costello, Sister Frances, Brooklyn, N.Y.
Costello, Sister Katherine, Brooklyn, N.Y.
Costello, Sister Maura, Ronkonkoma, N.Y.
Cottrell, Raymond S., Washington, D.C.
Couch, Janice, Staunton, Va.
Coulson, James, Salem, Oreg.
Coupland, Howard, Walnut Creek, Calif.
Courtois, Barbara O., Redondo Beach, Calif.
Couthen, Albert J., West Hartford, Conn.
Covalinski, Richard A., Morganton, N.C.
Covell, Mary P., Long Island City, N.Y.
Cowan, Inez, Knoxville, Tenn.
Cox, David, St. Augustine, Fla.
Cox, Diane S., Perry, N.Y.
Cox, Jack C., Bluffs, Ill.
Cox, John, St. Augustine, Fla.
Craig, Dr. Helen B., Pittsburgh, Pa.
Craig, Ouida L., Scottdale, Ga.
Craig, Dr. W. N., Pittsburgh, Pa.
Craighead, Richard, Garden Grove, Calif.
Crammatte, Alan B., Washington, D.C.
Crandall, Kathleen, Evanston, Ill.
Crane, Norman, Pt. Pleasant, N.J.
Crawford, Diane E., Santa Fe, N. Mex.
Crawford, Gladys H., Tallahassee, Fla.
Crawford, Jimmie R., Morganton, N.C.
Crews, Nancy F., Overland Park, Kans.
Cribbin, Rev. Thomas F., Brooklyn, N.Y.
Crichlow, Hazel J., St. Augustine, Fla.
Crider, Woodie H., Cave Spring, Ga.
Crissafulli, Pauline, Westbury, N.Y.
Crist, Nancy, Columbus, Ohio
Croft, Elizabeth, Staunton, Va.
Cromer, Patricia, Bloomington, Ind.
Cronce, Leon Roy, Clinton, N.J.
Cronin, Frances, Bronx, N.Y.
Cronk, Nancy Lee, Hyattsville, Md.
Cronlund, Philip E., West Hartford, Conn.
Crook, Nathan, Sheridan, Ariz.
Crookham, Ramona, Council Bluffs, Iowa
Crosson, Carol, Washington, Pa.
Crouch, Marcia B., Dallas, Tex.
Crow, Arthur, Little Rock, Ark.
Crowe, Georganna, Wilson, N.C.
Crowell, Betty, Big Spring, Tex.
Crown, Kathryn A., Huntington Beach, Calif.
Crozer, Norman, Arcadia, Calif.
Cruikshank, Sharon L., Halifax, Nova Scotia, Canada
Crutchfield, Paul B., Jr., St. Augustine, Fla.
Crutchfield, Mrs. Bashie, Morganton, N.C.
Crutchfield, Paul B., Morganton, N.C.
Cruzan, Gary, Tacoma, Wash.
Cue, Darryl M., Salem, Oreg.
Cullata, Mrs. Shelby, Pittsburgh, Pa.
Cullen, Sister Frances, Randolph, Mass.
Cullen, Sheila, Medford, Mass.
Cullison, Sammy K., Indianapolis, Ind.
Culton, Paul M., Huntington Beach, Calif.
Culverhouse, Patricia, Fulton, Mo.
Cunningham, Dorine, Carrollton, Tex.
Cunningham, Jane E., Seattle, Wash.
Cunningham, Patricia D., Austin, Tex.
Cunningham, Phyllis C., APO, Seattle, Wash.
Cupp, Beverly, Belmont, Calif.
Cupp, Judith Kay, Swayzee, Ind.
Curchin, Ames, West Webster, N.Y.
Curlee, Pamela B., Denver, Colo.
Curran, Sister Margaret, Randolph, Mass.
Currey, Robert, Council Bluffs, Iowa

Curry, Judy, Tucson, Ariz.
Curry, Patience R., Pittsburgh, Pa.
Curry, Sadie M., Hampton, Va.
Curtin, Sister Loyola Marie, Lake Ronkonkoma, N.Y.
Curtis, Gary A., Austin, Tex.
Curtis, Marie, Colorado Springs, Colo.
Curtis, Robert, Yardley, Pa.
Curtis, Robert R., Little Rock, Ark.
Curtis, Shirley R., Ontario, N.Y.
Cusack, Dorothy, Philadelphia, Pa.
Cutler, Miss Jamie, Westminster, Md.
Cuyler, Corliss Y., Newark, N.J.
Cwynar, Ann, Rochester, N.Y.
Czernicki, Edward, Romney, W. Va.
Czernicki, Norma P., Romney, W. Va.

D

Dacus, Marilyn, University, Ala.
D'Agostino, Dorothy O., Baton Rouge, La.
D'Agostino, Elizabeth P., Baton Rouge, La.
D'agostino, Louise, Roselle Park, N.J.
Dahlquist, Karen J., Las Vegas, Nev.
Daly, Marcia, Riverside, Calif.
D'Ambola, Laura B., Haverton, Pa.
Damiani, Geraldine, Fairview, N.J.
Damon, Faith B., Vancouver, Wash.
Dana, Rosemary, Derry, N.H.
Danchetz, Dorothy T., Ellenwood, Ga.
Daniels, Beatrice R., Chattanooga, Tenn.
Daniels, Margaret, Vancouver, Wash.
Danzig, Debra L., Beltsville, Md.
Danzig, Renee, Park Ridge, N.J.
Darby, Albert W., Bristol, Conn.
Dardano, Patricia, Washington, D.C.
Darnell, William T., Rochester, N.Y.
Darter, David T., Fort Worth, Tex.
Das, Jugaleswar, Uniondale, N.Y.
Das, K. N., Bronx, N.Y.
Daube, Charles G., Indianapolis, Ind.
Daugherty, J. Barbara, Louisville, Ky.
Daugherty, Dr. Ruth P., Silver Spring, Md.
Daulton, Dorothy, Columbus, Ohio
Davenport, Karen H., Spartanburg, S.C.
Davidowitz, David A., Nanuet, N.Y.
Davidson, Earl L., Riverside, Calif.
Davies, Judith N., Beverly, N.J.
Davies, Lois, Monroeville, Pa.
Davila, Robert R., Washington, D.C.
Davis, Albert W., Austin, Tex.
Davis, Alice Jean, Oxnard, Calif.
Davis, Anne, Staunton, Va.
Davis, Barbara, Austin, Tex.
Davis, Bilye J., Irving, Tex.
Davis, Bob A., Cave Spring, Ga.
Davis, Carol R., Lansdowne, Pa.
Davis, Charles W., Renton, Wash.
Davis, Clarence D., Fulton, Mo.
Davis, Dorothy, Westbrook, Maine
Davis, Ellen, Little Rock, Ark.
Davis, Ginger, Rome, Ga.
Davis, Helen, Fulton, Mo.
Davis, Jean G., Fulton, Mo.
Davis, Joy E., Roanoke, Va.
Davis, Katherine M., Davenport, Iowa
Davis, Lawrence, Sioux City, Iowa
Davis, Marie M., Frederick, Md.
Davis, Mary Lee, Langhorne, Pa.
Davis, Mary Lee, Titusville, N.J.
Davis, Nancy C., Pittsburgh, Pa.
Davis, Richard O., Fulton, Mo.
Davis, Robert D., Austin, Tex.
Davis, Robinson, Fulton, Mo.
Davis, Ruth P., Hatfield, Pa.
Davis, Sandra L., St. Augustine Beach, Fla.
Davis, Tomasine, Austin, Tex.
Davis, Vernon W., Henrietta, N.Y.
Davis, Walter, St. Augustine Beach, Fla.
Davis, Wilma, Cave Spring, Ga.
Dawson, Elizabeth S., Wilson, N.C.
Dawson, Robert T., St. Augustine, Fla.
Dawson, Mrs. Ronald J., Johnson City, Tenn.
Day, Charles A., Brunswick, Md.
Day, Harvy D., Belmont, Calif.
Dean, Mary J., Baton Rouge, La.
Deardoff, Adelia D., Dallas, Tex.
Deasy, Victoria, Santa Monica, Calif.
DeBold, Joanne, Webster, N.Y.
DeCecco, Erna, Indianapolis, Ind.
Decker, Gregory Lee, Riverside, Calif.
Decker, Nancy J., Frederick, Md.
de Cordero, Ana C. Brenes, Arecibo, P.R.
de Costa, Adela Vazquez, Bayamon, P.R.
De Face, Kathleen, Dallas, Tex.
Degler, John M., Willow Grove, Pa.
DeGrood, Philip William, Santa Ana Heights, Calif.
de Herrera, Piedad Marti, Rio Piedros, P.R.
Deist, Marlene H., Windom, Minn.
DeIuliis, Rita A., Pittsburgh, Pa.
Delaney, Sister Mary, Buffalo, N.Y.
Delaughter, Betty L., Morganton, N.C.
Delgado, Gilbert, Washington, D.C.
d'Elia, Mrs. Toshiko, Ridgewood, N.J.
Delich, Anne S., Pasadena, Calif.
DeLucca, Marianne, Walnut Creek, Calif.
De Lyser, Ann, Rochester, N.Y.
Demanzuk, Jane, Fayetteville, Ark.
DeMarco, Rev. Peter A., Bridgeport, Conn.
Dement, Sue, Faribault, Minn.
Demeza, Dr. Joseph G., Belleville, Ontario, Canada
Deming, Robert J., Great Falls, Mont.
Demitrieus, Mrs. Lynn T., Scarsdale, N.Y.
Demme, Virginia, Vancouver, Wash.
Denardin, Sally, Indianapolis, Ind.
Dengler, Joseph V., Rochester, N.Y.

DeNight, Charlotte, Jacksonville, Ill.
Deninger, Michael, Seabrook, Md.
Denis, Taras B., Elmsford, N.Y.
Denney, Laurie T., Wilmington, Del.
Denning, Dr. Harold G., Baton Rouge, La.
Dennis, Sharyl A., Berkley, Mich.
Dennis, William, North Little Rock, Ark.
Dennis, Zona G., Manhattan, Kans.
Denno, Bruce, Fenton, Mich.
Denny, Stella, Wabash, Ind.
Denton, Dr. David M., Frederick, Md.
Denton, Sudie K., Wilson, N.C.
Deppong, Marjorie, Corunna, Mich.
Deptula, M. Elaine, Austin, Tex.
Depue, Sylvia W., Portland, Oreg.
deRose, Rae, Newington, Conn.
deShazer, Mary L., Omaha, Nebr.
DeSio, Lois, Kew Gardens, N.Y.
Desmarais, Marjorie A., Talladega, Ala.
Desrosier, Shirley J., Granby, Conn.
Desrosier, Thomas R., Granby, Conn.
Duel, Harold C., Valdese, N.C.
Duel, John R., Romney, W. Va.
Duel, Patricia, Valdese, N.C.
DeVazquez, Mrs. Monserrate Gonzales, Mayaguez, P.R.
Dever, Jane, Talladega, Ala.
Devereaux, Robert, Vancouver, Wash.
Devilbiss, James V., Frederick, Md.
Deville, Gayle, Baton Rouge, La.
Deville, John L., Baton Rouge, La.
Devine, Norman, Council Bluffs, Iowa
DeVinney, Charles, Vancouver, Wash.
DeVito, Donna, Verona, Va.
DeVito, Rocco, Verona, Va.
DeVore, Margaret, Casper, Wyo.
DeVoss, Margaret, Normal, Ill.
DeWart, Ann, Prides Crossing, Mass.
Diacon, Frances, Sulphur, Okla.
Diagonale, Josephine, College Park, Md.
Diamant, Jay, Greenbelt, Md.
Diarmit, Loretta, Salem, Oreg.
DiCaprio, Rita L., University Heights, Ohio
Dicapue, Marjorie, East Hartford, Conn.
Dickens, Hattie M., Morganton, N.C.
Dicker, Eva, Fox Point, Wis.
Dickinson, Mildred, Olathe, Kans.
Dickson, Alice, Pittsburgh, Pa.
Dickson, G. Wesley, Pittsburgh, Pa.
DiCola, Mary A., Danville, Ky.
Dietz, Nancy, Concord, Tenn.
Dignan, Arthur, Northridge, Calif.
Dignan, Joyce, Northridge, Calif.
Diller, Joyce, Jersey City, N.J.
Dillingham, Elmer, Morganton, N.C.
Dillingham, Mary C., Morganton, N.C.
Dillingham, Prudence, Rome, Ga.
Dillon, Dr. Thomas J., Santa Fe, N. Mex.
Di Lorenzo, Dr. Joseph, Jacksonville, Ill.
DiMartino, Rafaella, Belleville, N.J.
Dinger, Kathy, Lenexa, Kans.
Dinklage, Linda, Columbus, Ga.
Diot, Virginia, Vancouver, Wash.
Dirst, Richard D. Lilburn, Ga.
DiSanto, James, Pittsburgh, Pa.
Disheroon, Gaye, Hot Springs, Ark.
Diskant, Andrew L., Jr., West Hartford, Conn.
DiSomma, Elizabeth, White Plains, N.Y.
Dispenza, Herlena, Baton Rouge, La.
Dixon, Linda, Jacksonville, Ill.
Dixon, Marguerite, Pittsburgh, Pa.
Dixon, Mary T., Baton Rouge, La.
Dixon, Dr. Richard F., Greensboro, N.C.
DiYanni, Mary H., Hartsdale, N.Y.
DiZinno, Mary Celeste, Cleveland, Ohio
Doane, Glenna N., Kissimee, Fla.
Dobbs, John Allen, Baton Rouge, La.
Dobecki, Janet S., Westerville, Ohio
Dodge, R. Douglas, Frederick, Md.
Doerfler, Dr. Leo G., Pittsburgh, Pa.
Doerger, Rev. Stanley D., Cincinnati, Ohio
Doheny, Dolores, Brooklyn, N.Y.
Doherty, Diane, Bloomfield, N.J.
Dolan, Jane, Dallas, Tex.
Doland, Patricia, Vancouver, Wash.
Donald, Maureen M., Vancouver, British Columbia, Canada
Doncaster, Lana R., Knoxville, Tenn.
Donnell, Gloria S., Peoria, Ill.
Donoghue, Lina, Portland, Oreg.
Donoghue, Robert, Chicago, Ill.
Donohoe, Sister Ann, Randolph, Mass.
Donovan, Geraldine Law, Ebensburg, Pa.
Dore, Anne B., Baton Rouge, La.
Dorrance, Patricia C., Simi, Calif.
Dorsey, Eugene, Jackson, Miss.
Doster, Grady C., Atlanta, Ga.
Doucette, Neil, Baton Rouge, La.
Dougherty, Rosalie, Rochester, N.Y.
Douglas, Josie, Knightdale, N.C.
Dovey, Mildred L., Pittsburgh, Pa.
Dowd, Mary, Lancaster, Ky.
Dowling, Michael V., Tonawanda, N.Y.
Dowling, Patrick J., Spartanburg, S.C.
Downing, Anne, Battle Creek, Mich.
Doule, James E., Davenport, Iowa
Drachler, Bella, Chicago, Ill.
Drackley, Bruce, Delavan, Wis.
Drake, Dennis, Council Bluffs, Iowa
Drake, Donna, St. Augustine, Fla.
Drake, Race, Staunton, Va.
Drake, Sue K., Austin, Tex.
Dray, Gerry, ElCentro, Calif.
Dreher, Kathryn B., Roanoke, Va.
Dreistadt, Sister Justina, S.C., Pittsburgh, Pa.
Drell, Barbara, Oak Park, Ill.
DuBard, Etoile, Hattiesburg, Miss.
Dube, Yolande C., Nashua, N.H.
Ducham, Katherine M., Danville, Ky.
Dudek, Joan P., Silver Creek, N.Y.
Dudley, Patricia L., Johnson City, Tenn.

Duff, Judith A., Alexandria, Va.
Duffy, Gloria M., New York, N.Y.
Duick, Charles, Delavan, Wis.
Duick, Edra, Delavan, Wis.
Dukes, Edythe, Knoxville, Tenn.
Duncan, Wendell W., West Hartford, Conn.
Dunham, Maude, Delavan, Wis.
Dunne, Mary L., Jerome, Idaho
Dunnell, Nancy S ., St. Augustine, Fla.
Duprez, Mrs. Daryl, Sewell, N.J.
Durfee, Constance, Rochester, N.Y.
Durham, Mary L., Greer, S.C.
Dutton, Delma, Lawndale, Calif.
Dwyer, Marynell, Norristown, Pa.
Dwyer, Melanie E., Santa Fe, N. Mex.
Dwyer, Rev. Robert D., Rome, N.Y.
Dyer, Dyann, Tulsa, Okla.
Dyer, Edithlyn, Dallas, Tex.
Dyer, Kathryn I., Springfield, W. Va.
Dyke, Hazel M., Frederick, Md.
Dykes, Earlene, Tucson, Ariz.
Dykman, Carl J., San Antonio, Tex.
Dyl, Kenneth J., Kenmore, N.Y.
Dziurzynski, Stanley, Knoxville, Tenn.
Dzurick, Russell, Fulton, Mo.
Dzurick, Sarah, Fulton, Mo.

E

Eads, Frances, Little Rock, Ark.
Earls, Lucille J., Euless, Tex.
Eastman, Gilbert C., Crofton, Md.
Eatmon, Clara K., Wilson, N.C.
Eaton, Margaret, Riverside, Calif.
Ebbitt, Helen L., Whittier, Calif.
Edelberg, Ann R., Utica, N.Y.
Eccher, Ann, Rochester, N.Y.
Eckstein, William F., Little Rock, Ark.
Edelin, Patricia, Washington, D.C.
Edelstein, Beatrice C., Newark, N.J.
Eder, Martha, Hamburg, N.Y.
Edge, Katherine A., Honolulu, Hawaii
Edmondson, Ruby, Austin, Tex.
Edmunds, Henry C., Knoxville, Tenn.
Edwards, Brenda S., Gravel Switch, Ky.
Edwards, Carol L., Waldo, Wis.
Edwards, Davis, Parksville, Ky.
Edwards, Eleanor, New Boston, N.H.
Edwards, Fern, Washington, D.C.
Edwards, Ruth, Delavan, Wis.
Egan, Dr. Howard L., Washington, D.C.
Egbert, Ethel H., Battle Ground, Wash.
Egbert, Marie, Colorado Springs, Colo.
Egbert, William, Brooklyn, N.Y.
Ehrlich, Susan, Portsmouth, Va.
Ehrman, Jeannette, Pittsburgh, Pa.
Eichelberger, Nancy L., La Mesa, Calif.
Eichler, Elizabeth, Rochester, N.Y.
Eiring, Leslie, Riverside, Calif.
Eisen, Carol, Phoenix, Ariz.
Eisenberg, Roslyn, Santa Fe, N. Mex.
Eley, Kathleen, Pontiac, Mich.
Elioseff, Jane W., Cambridge, Mass.
Elkins, Donna K., St. Augustine, Fla.
Elkins, Gertrude S., Morganton, N.C.
Ellefson, Margaret, Sioux Falls, S. Dak.
Ellerbeck, Marian L., Hastings, Nebr.
Elliott, Judy G., Sulphur, Okla.
Elliott, Neilius L., Riverside, Calif.
Elliott, Shirley R., Salt Lake City, Utah
Elliott, Dr. Woodrow W., Talladega, Ala.
Ellis, Charles, Sioux Falls, S. Dak.
Ellsworth, Darrell D., Webster, Mo.
Elrod, Helen I., North Little Rock, Ark.
Elson, Gary J., Riverside, Calif.
Elson, Linda E., Riverside, Calif.
Elstad, Mary C., Denver, Colo.
Elwell, Beverly A., St. Augustine, Fla.
Embree, Judith, Buffalo, N.Y.
Embry, Joan, St. Augustine, Fla.
Emerick, Aletha G., Riverside, Calif.
Emler, Karolyn, Rochester, N.Y.
Enders, Marilyn, Williamson, N.Y.
Engle, Janet A., Alsey, Ill.
English, Macie, North Miami Beach, Fla.
English, Millard B., Devils Lake, N. Dak.
Ennis, John Mark, Washington, D.C.
Enoch, Mary, Milwaukee, Wis.
Enola, John A., Brattleboro, Vt.
Enyart, Mrs. Jonne, Bronx, N.Y.
Eppich, Cynthia D., Cleveland, Ohio
Epps, Margaret G., Newport News, Va.
Epstein, Gerald, Pomona, Calif.
Epstein, Jacqueline, Huntingdon Valley, Pa.
Erickson, Albert, Milwaukee, Wis.
Erickson, Delbert L., Omaha, Nebr.
Erickson, Susan E., Lincoln, Nebr.
Erickson, William M., Salem, Oreg.
Erkson, Ellen B., Alexandria, Va.
Erlacher, Mary Lou S., Cedar Rapids, Iowa
Erlandson, Delores, Tucson, Ariz.
Erting, Carol, Avondale Estates, Ga.
Ervin, Dr. Jean C., Charlottesville, Va.
Esterline, Albert C., Faribault, Minn.
Esterline, Lucille, Faribault, Minn.
Estes, Linda D., Austin, Tex.
Etheridge, Caroline F., Riverside, Calif.
Eubanks, Marian, Phoenix, Ariz.
Eulass, Dorothy, Northbrook, Ill.
Eustace, Doris M., Rochester, N.Y.
Evans, Elva E., Wilson, N.C.
Evans, Sister Francine, Rochester, N.Y.
Evans, Judith, Cos Cob, Conn.
Evans, Nancy, Portland, Oreg.
Evans, Sue B., Danville, Ky.
Evans, W. P., Danville, Ky.
Evelsizer, Dr. Ronald, University, Ala.
Everhart, Bonnie G., Arlington Hts., Ill.
Eversden, Marguerite V., Narberth, Pa.

F

Fagan, Ernestine H., Colorado Springs, Colo.
Fahey, Celia J., Riverside, Calif.
Fahlbusch, Nadine, Riverside, Calif.
Fair, Ellen J., Carmel, Ind.
Faist, Lois, Lawndale, Calif.
Falb, Sharon, West St. Paul, Minn.
Falconer, Patti Jo, Oak Park, Ill.
Fallon, Denis P., Colorado Springs, Colo.
Fangman, Thomas J., Evanston, Ill.
Fant, Christine, Austin, Tex.
Fant, Louie J., Jr., Northridge, Calif.
Farman, Jay, Rome, N.Y.
Farman, Sister Rose Ann, Calgary, Alberta, Canada
Farmer, Betty M., Rock Island, Ill.
Farmer, Brenda C., Raleigh, N.C.
Farmer, Gary W., Raleigh, N.C.
Farquahar, Hugh D., East Hartford, Conn.
Farrar, Cathy, Charlottesville, Va.
Farrell, Eileen, West Hartford, Conn.
Farrell, Joan E., New York, N.Y.
Farrell, Rhonda, Brockport, N.Y.
Faulkner, Lorna H., Bliss, Idaho
Faust, Paula, New Orleans, La.
Fauth, Bette, Riverside, Calif.
Fauth, Edith M., Santa Fe, N. Mex.
Fauth, Warren W., Riverside, Calif.
Fearn, Dr. Katye, Saginaw, Mich.
Featherson, Olivia J., Silver Spring, Md.
Feder, Fern, Wilmette, Ill.
Feder, Glenda, Dallas, Tex.
Fee, Shirley, Markleysburg, Pa.
Fehsenfeld, Robert H., Lake Ronkonkoma, N.Y.
Felder, Blanche, Baton Rouge, La.
Feldman, Carin, Brooklyn, N.Y.
Feldman, Larry, Baldwin, N.Y.
Feldman, Sharon M., Idaho Falls, Idaho
Feller, Edward, Jacksonville, Ill.
Feller, Patricia Jo, Jacksonville, Ill.
Fendrich, Richard, Jackson Heights, N.Y.
Fenner, Marie L., Austin, Tex.
Fenton, Mrs. Marion D., Avon, Conn.
Ferguson, Judy, Little Rock, Ark.
Ferguson, Mary K., Waco, Tex.
Fernandes, Jean, Seattle, Wash.
Fernandes, Joan K., Arlington, Tex.
Ferraro, Linda Carol, Woodbridge, N.J.
Ferris, Margaret H., Neenah, Wis.
Fertig, Barbara, Philadelphia, Pa.
Fertig, Ralph, El Monte, Calif.
Fest, Paul E., Vancouver, Wash.
Fetrow, Richard, Council Bluffs, Iowa
Feulner, Sister Joanne, Brooklyn, N.Y.
Fewell, Jane, Indianapolis, Ind.
Fewell, Sharla, North Little Rock, Ark.
Fewell, Windell W., Indianapolis, Ind.
Fey, Patricia A., Syracuse, N.Y.
Fialkowski, June D., Union, N.J.
Field, Cornelia C., Omaha, Nebr.
Feld, Jean, Dobbs Ferry, N.Y.
Fielding, Beverly A., Speedway, Ind.
Fields, Marguerite, Tuckahoe, N.Y.
Fields, Rochelle, Silver Spring, Md.
Fike, Elsie B., Inman, S.C.
File, Hazel, Jacksonville, Ill.
Finch, George L., Austin, Tex.
Finch, Jerrie, Little Rock, Ark.
Fine, Paula Schilling, Summit, N.J.
Finke, Arlen, Huntington Sta., N.Y.
Finley, Sister Margaret, Brooklyn, N.Y.
Finnegan, Joseph P., St. Augustine, Fla.
Finnerty, Patricia Ann, Bellerose, N.Y.
Finnested, Havgey, Delavan, Wis.
Fiock, Barbara Lee, Washington, D.C.
Fischer, David C., Dayton, Ohio
Fisher, Gwen P., Superior, Wis.
Fisher, Jennifer, Tucson, Ariz.
Fishler, Nadine L., Riverside, Calif.
Fishler, Thomas G., Riverside, Calif.
Fitch, Carolyn Kay, Mt. Erie, Ill.
Fitch, Dr. James L., Hattiesburg, Miss.
Fitz-Gerald, Della A., Washington, D.C.
Fitz-Gerald, Max, Washington, D.C.
Fitzgibbon, Sister Catherine, Lake Ronkonkoma, N.Y.
Fitzpatrick, Sister Bridgetta, Pittsburgh, Pa.
Fitzpatrick, Judith L., Johnstown, Pa.
Flanagan, Diane, Baton Rouge, La.
Flanagan, Senath J., Romney, W. Va.
Flecker, Penny, Harrisonburg, Va.
Fleischer, Lawrence R., Northridge, Calif.
Fleming, Nettie G., St. Augustine, Fla.
Fleming, Robert G., Morganton, N.C.
Fleming, Shirley, Ogden, Utah
Fletcher, Dexter, Chicago, Ill.
Fletcher, Robert W., Ogden, Utah
Flister, Sara Louise, Pittsburgh, Pa.
Flood, Dr. James T., Columbus, Ohio
Flower, Barbara, Knoxville, Tenn.
Flower, Warren A., Knoxville, Tenn.
Flynn, Dr. Marilyn L., Normal, Ill.
Fogel, Dorothea D., Lansdale, Pa.
Folan, Eileen, Brentwood, N.Y.
Foley, Merle J., Frederick, Md.
Fontana, David A., Riverside, Calif.
Fonville, Wilson E., Colorado Springs, Colo.
Forcht, Wanda, Vancouver, Wash.
Ford, Dale K., Pittsburgh, Pa.
Ford, Elizabeth, Oakland, Calif.
Ford, Eugenia C., Baton Rouge, La.
Fore, Patricia, Ardmore, Okla.
Foreman, Jack, Tulsa, Okla.
Forestal, Lawrence, Villa Park, Ill.
Forry, Mary Dianne, Knoxville, Tenn.
Forsyth, Diana, St. Augustine, Fla.
Foshay, Barbara, Milton, Mass.
Foss, Mary Jo, Sioux Falls, S.C.
Foster, Elizabeth, Indianapolis, Ind.
Foster, Sharon, Council Bluffs, Iowa
Fowler, Kate B., Morganton, N.C.

Fowler, Robert, Vancouver, Wash.
Fox, Barbara J., Atlanta, Ga.
Foy, Lenola M., Brooklyn, N.Y.
Fracol, Linda June, Allentown, Pa.
Frakes, Glen, Colorado Springs, Colo.
Frame, Jacqueline, Fulton, Mo.
Frampton, Diane, Princeton, N.J.
Francis, Patricia I., Stonington, Conn.
Frank, Diane, Aylesboro, Pa.
Frank, Jill, Okemos, Mich.
Franks, Dr. J. Richard, Pullman, Wash.
Franks, James R., Raleigh, N.C.
Franzen, Virginia, Sea Cliff, N.Y.
Franzon, Kathy, Trenton, N.J.
Fraser, Forrest, Denver, Colo.
Fredericks, Raymond K., Jacksonville, Ill.
Freeman, Helen B., Knoxville, Tenn.
Freeman, Jerome W., Knoxville, Tenn.
French, Sophie L., Ann Arbor, Mich.
Freund, Dorithy, Faribault, Minn.
Frick, Alice, Staunton, Va.
Frick, Wayne, Staunton, Va.
Friesen, Agnes, Winnipeg, Manitoba, Canada
Frisch, Frances, Jacksonville, Ill.
Frisina, Dr. D. Robert, Pittsford, N.Y.
Froehlich, Barbara J., New York, N.Y.
Frolich, Robert, Rochester, N.Y.
Froman, Laura, Quincy, Ill.
Fruchter, Arlene, West Hartford, Conn.
Fuehrer, Janice L., Indianapolis, Ind
Fuentes, Irene, Cicero, Ill.
Fujiyama, Carol F., Monterey Park, Calif.
Fuller, D. Ray, Jr., Little Rock, Ark.
Fuller, Michal, Salt Lake City, Utah
Fuller, Ren S., Jr., Romney, W. Va.
Fuller, Virginia, Benton, Ark.
Fulton, Jean C., Washington, D.C.
Fultz, Vae Rose, Jacksonville, Ill.
Funderberg, Ruth Seth, Tucson, Ariz.
Funk, Dr. Harry E., Austin, Tex.
Furey, Dr. Mary, Washington, D.C.
Furman, Virginia S., Powell, Tenn.

G

Gabriel, Connie M., Garner, N.C.
Gagnard, Robert T., Metarie, La.
Gaines, Marguerite, Baton Rouge, La.
Gaines, Mary, Cave Spring, Ga.
Gaines, Sharon L., Lincoln, Nebr.
Gallimore, Ray H., St. Augustine, Fla.
Galloway, Gertrude S., Frederick, Md.
Galloway, Victor H., Glenn Dale, Md.
Galvan, Betty, Orinda, Calif.
Galvan, John, Orinda, Calif.
Gamble, Ann, Morganton, N.C.
Gandy, Kay R., Fort Worth, Tex.
Gannon, Jack, Washington, D.C.
Ganssle, Claireanne, Skillman, N.J.
Gant, Evelyn F., Delavan, Wis.
Gantz, Patricia, Council Bluffs, Iowa
Gaor, Marcia, Staten Island, N.Y.
Garber, Dr. Garl E., Ypsilanti, Mich.
Garber, Nettie Mae, Albany, N.Y.
Gardella, Clare L., San Carlos, Calif.
Gardner, Mrs. Lindsey S., Tallahassee, Fla.
Garfield, Marianne B., Pittsburgh, Pa.
Garlitz, LaDonna F., Romney, W. Va.
Garretson, Carol, Wheaton, Md.
Garretson, Mervin D., Wheaton, Md.
Garrett, Erpel, Riverside, Calif.
Garrison, Myra M., Omaha, Nebr.
Garrity, James, Pittsburgh, Pa.
Garrity, Sr. Rose Xavier, Pittsburgh, Pa.
Garson, Joan, Bronx, N.Y.
Gatehouse, James, Cumberland Center, Maine
Gatehouse, Lois, Cumberland Center, Maine
Gates, Iolla V., Riverside, Calif.
Gatlin, Theda, Benton, Ark.
Gaudefroy-Demombynes, Laura, Seattle, Wash.
Gay, Mildred E., Sulphur, Okla.
Gaylord, Iola C., Glen Alpine, N.C.
Gays, Richard P., Newark, Del.
Gazal, Mary Ann, Morris Plains, N.J.
Geiger, Connie L., Colorado Springs, Colo.
Geisser, Maura J., Randolph, Mass.
Gellner, Robert F., Rochester, N.Y.
Genetti, Anne M., Kalamazoo, Mich.
George, Juanita, Vancouver, Wash.
Gerlach, Barbara, Milwaukee, Wis.
Giambaresi, Philip E., Northridge, Calif.
Giangreco, C. Joseph, Council Bluffs, Iowa
Giannotti, Sherrie, Honolulu, Hawaii
Gibish, Stella, Pittsburgh, Pa.
Gibson, Joy, Cave Spring, Ga.
Gibson, Susan Pauley, Marshall, Mich.
Gibson, Thomas W., Cary, N.C.
Gibson, William J., Bronx, N.Y.
Giett, Ethel M., West Hartford, Conn.
Gigler, David, Saugus, Calif.
Gilbert, Mary S., Bristol, Pa.
Gilbert, Raymond J., Vancouver, Wash.
Gilbert, Ruth, Forest City, N.C.
Gilchrist, Katherine, Talladega, Ala.
Giles, Catherine, Talladega, Ala.
Gilkey, Ann, North Little Rock, Ark.
Gill, Louise Alleyne, Hyattsville, Md.
Gill, Barbara K., Beltsville, Md.
Gillard, Gary L., Jefferson, Md.
Gillespie, Margaret P., Tucson, Ariz.
Gilmore, Charles A., Washington, D.C.
Gimpel, Christine, Hyattsville, Md.
Ginsberg, Dale Ann, Oshkosh, Wis.
Giorando, Joseph P., West Hartford, Conn.
Giordano, West Hartford, Conn.
Girard, Helene M. E., Southampton, Pa.
Gittleman, Gilda, Trenton, N.J.
Gittzus, N. Maurine, Wilmington, Mass.

Glancy, Leonard, Indianapolis, Ind.
Glander, Jean, Janesville, Wis.
Glass, Rhonda L., Raleigh, N.C.
Glawe, Arleen, Sioux Falls, S. Dak.
Gleason, Ann, Cedar Rapids, Iowa
Glenn, Charles W., Cave Spring, Ga.
Glessner, Roberta Carol, Pittsburgh, Pa.
Glover, Mrs. Sammye H., Avondale Estates, Ga.
Gobble, Edward, Jacksonville, Fla.
Goble, Bill, Newland, N.C.
Godfrey, Ruth W., Jacksonville, Ill.
Godsave, Bruce, Providence, R.I.
Godsave, Carol T., Providence, R.I.
Godwin, Margaret, Washington, D.C.
Goetter, Marie S., Omaha, Nebr.
Goetzinger, Dr. C. P., Olathe, Kans.
Goetzinger, Madelon, Kansas City. Kans.
Goetzinger, Rita, Olathe, Kans.
Goff, Elma E., Colorado Springs, Colo.
Goforth, Naomi, Salem, Oreg.
Goins, LaFon, Tucson, Ariz.
Goldberg, Leonard, Randolph, Mass.
Golden, Emanuel, Bowie, Md.
Golden, Phoebe, St. Johns, Pa.
Goldfarb, Soralie L., Pittsburgh, Pa.
Goldman, Linda, Mission Viejo, Calif.
Goldman, Merle, Indianapolis, Ind.
Goldman, Dr. Morris, Washington, D.C.
Goldmann, Warren R., Rochester, N.Y.
Golightly, Vernon J., Morganton, N.C.
Golladay, Loy E., Rochester, N.Y.
Goluba, Ronald, North Miami Beach, Fla.
Gonter, Martha A., Buffalo, N.Y.
Gonzales, Lorel A., Gooding, Idaho
Gonzales, Ricardo, Riverside, Calif.
Goode, Leigh, Portland, Maine
Goode, Nelda H., Dallas, Tex.
Goodman, Gail, Los Angeles, Calif.
Goodman, Hazel S., Jackson, Miss.
Goodwin, Ronald C., Hopewell, N.J.
Gordon, Mrs. Marion, Fulton, Mo.
Gordon, Nancy H., Staunton, Va.
Gore, Toni, Phoenix, Ariz.
Gosserand, Marie C., New Roads, La.
Gottlieb, Iris C., Glencoe, Ill.
Gough, Judy D., Olathe, Kans.
Gould, Frances H., Bridgeton, N.J.
Gowan, Yvonne, Sulphur, Okla.
Gower, Nancy C., Danville, Ky.
Gowing, Elizabeth M., Waynesboro, Va.
Gradnauer, Thomas, Trenton, N.J.
Graff, Risa, Chicago, Ill.
Graham, Anne S., Whitestone, N.Y.
Graham, Jacqueline, Staunton, Va.
Graham, Lester D., Santa Fe, N. Mex.
Graham, Mary E., St. Augustine, Fla.
Graham, Robert, St. Augustine, Fla.
Grammatico, Leahea, Redwood City, Calif.
Grant, June M., San Antonio, Tex.
Grant, William, Tacoma Park, Md.
Grantz, Kathy, Colorado Springs, Colo.
Graunke, Mildred, Johnson City, Tenn.
Graunke, Dr. W. Lloyd, Johnson City, Tenn.
Graves, Milton T., Rochester, N.Y.
Gray, Angela, Baltimore, Md.
Gray, Helen Joan, Farmington, Mich.
Gray, Virginia G., Jacksonville, Ill.
Graybill, Joanne C., Brownwood, Tex.
Greeley, Maryann, Brooklyn, N.Y.
Green, Blanche, Philadelphia, Pa.
Green, Emily L., Houston, Tex.
Green, Sylvania, Spartanburg, S.C.
Greenbaum, Sue R., Bronx, N.Y.
Greenberg, Bernard, Washington, D.C.
Greene, Doris T., Morganton, N.C.
Greene, Sandra, Casper, Wyo.
Greenman, Linda G., Eugene, Oreg.
Greenmun, Rosalind R., Elkton, Fla.
Greenwald, Kathryn, Nennah, Wis.
Greenwalt, Kristi, Gooding, Idaho
Greetzman, Shari R., Denver, Colo.
Greever, Gaynelle, Staunton, Va.
Gregory, Lester, Fayetteville, Ark.
Gremillion, Harvey, Baton Rouge, La.
Griffin, Ann B., Seminole, Tex.
Griffin, Barbara, Buffalo, N.Y.
Griffin, Constance M., Austin, Tex.
Griffin, Edra, Olathe, Kans.
Griffin, Linda Carol, Virginia Beach, Va.
Griffin, Sheila, Arlington, Mass.
Griffing, Barry L., Sacramento, Calif.
Grigonis, Dorothea, Atlanta, Ga.
Grimaldi, Anthony, Bayside, N.Y.
Grimley, Judith R., Baton Rouge, La.
Grimm, Judith, New Brighton, Minn.
Grissom, Patsy A., Muscle Shoals, Ala.
Grogan, Jacqueline A., Scarsdale, N.Y.
Groode, Joyce, Shatsworth, Calif.
Gross, Myra S., Silver Spring, Md.
Groth, John W., Jr., Hampton, Va.
Grover, Edward C., Columbus, Ohio
Groves, Donna L., Albuquerque, N. Mex.
Groves, Ian, San Jose, Calif.
Groves, Mary Bea, Jacksonville, Ill.
Grubbs, Deenie, Jackson, Miss.
Gruber, Anne L., Ypsilanti, Mich.
Gruenhagen, Merlen, Columbus, Ohio
Gruss, Betty, Faribault, Minn.
Gruver, Margaret H., Portland, Maine
Guenther, Nina, Roland, Ark.
Guffey, Ernest, Staunton, Va.
Guido, Eleanor, Yonkers, N.Y.
Guilmynott, James A., Austin, Tex.
Gulbranson, Claude S., Port Byron, Ill.
Gulick, Mabel, Olathe, Kans.
Gulley, Caroyln, Danville, Ky.
Gunderson, Rosella, Rossmore Walnut Creek, Calif.
Guralnick, Susan, Seattle, Wash.
Gusfield, Miriam, Reston, Va.
Gustafson, Lloyd, Manchester, Conn.
Gustafson, Wayne, Duluth, Minn.
Gustason, Dr. Gerilee, Washington, D.C.
Gutin, Anna B., Arnold, Md.

Guttadore, S. Theodore, Aurora, Colo.
Gutteridge, Marianne, Seattle, Wash.
Guy, Beverly F., Baton Rouge, La.
Gyle, Alice, Pittsburgh, Pa.

H

Hack, Cheryl Hope, Southfield, Mich.
Hackney, Donald L., Danville, Ky.
Haecker, Ernest E., Santa Fe, N. Mex.
Hafer, Jan C., Shepherdstown, W. Va.
Hagerty, Elizabeth Barron, Allentown, Pa.
Hagen, Nancy, Wausau, Wis.
Haglund, Claron, Ogden, Utah
Hahn, Dorothy, Toledo, Ohio
Hahn, Elizabeth, Pleasant Hill, Calif.
Haig, Carol L., Seattle, Wash.
Hailey, C. Philip, Morganton, N.C.
Haines, Margaret L., St. Augustine, Fla.
Haines, Margaret M., Shanks, W. Va.
Haining, Velma J., Jackson, Miss.
Haislip, Camille, Staunton, Va.
Hajna, Regina, Rome, N.Y.
Halberg, Caroline T. West Hartford, Conn.
Halberg, David H., West Hartford, Conn.
Halbkat, Helen, Austin, Tex.
Hale, Alice, Dallas, Tex.
Hall, Aileen, Kensington, Md.
Hall, Charlotte, Knoxville, Tenn.
Hall, Edna, Monrovia, Calif.
Hall, Harry L., Jr., Jacksonville, Ill.
Hall, Jan L., Northridge, Calif.
Hall, Jonathan, Kensington, Md.
Hall, Nancy, Scarborough, Maine
Hall, Nancy, Austin, Tex.
Hally, Mary M., Framingham Center, Mass.
Halstead, Sammie R., Alexandria, Va.
Hamilton, Nancy K., North Little Rock, Ark.
Hamlet, Carol A., Knoxville, Tenn.
Hamlin, Christine S., Galveston, Tex.
Hammer, Sharon H., Camas, Wash.
Hammermeister, Dr. Frieda, Pittsburgh, Pa.
Hammermeister, Kersti N., Pittsburgh, Pa.
Hammerstrom, Mary J., Omaha, Nebr.
Hammett, Louise S., Talladega, Ala.
Hamitt, Dorothy Ann, New York, N.Y.
Hammond, Mike, Santa Fe, N. Mex.
Hampton, Ida W., St. Augustine, Fla.
Hampton, Sherwood, St. Augustine, Fla.
Hancock, Elizabeth A., Dearborn, Mich.
Hanes, Gertrude, Pittsburgh, Pa.
Haney, James Hutchinson, Denver, Colo.
Haney, Mary R., Danielson, Conn.
Hankins, Joseph A., Jacksonville, Ill.
Hanks, Richard T., Las Cruces, N. Mex.
Hannah, Jolene, West Covina, Calif.
Hannah, Mary A., Indianapolis, Ind.
Hansen, Elizabeth, Council Bluffs, Iowa
Hanson, George, Faribault, Minn.
Hanson, Grace H., Austin, Tex.
Hanson, Linda, Sanford, Maine
Hanys, Miriam, Dallas, Tex.
Harbottle, Patricia, Olyphant, Pa.
Harden, Elizabeth, Staunton, Va.
Hardie, Mary, Milwaukee, Wis.
Hardin, Vanda, Morganton, N.C.
Hardy, Patricia T., Scranton, Pa.
Hardy, Vernelle, Hampton, Va.
Hargis, Dr. Charles K., Knoxville, Tenn.
Hargraves, Britt, Westminster, Md.
Hargreaves, Alfred, Talladega, Ala.
Harguess, Ann E., Salem, Oreg.
Harlan, Brian, Delavan, Wis.
Harland, Gordon, Tucson, Ariz.
Harlow, Joyce T., Somerville, N.J.
Harmless, Betty, Phoenix, Ariz.
Harmon, A. B., Louisville, Ky.
Harmon, Dr. Robert, Washington, D.C.
Harms, Virginia, Trenton, N.J.
Harned, Sylvia Marie, Amarillo, Tex.
Harp, Jan, Baton Rouge, La.
Harper, Phyllis M., Jacksonville, Ill.
Harper, William, Vancouver, Wash.
Harrington, Dr. John D., New York, N.Y.
Harris, Betty M., Ventura, Calif.
Harris, Bobbie F., Austin, Tex.
Harris, Eleanor M., Rome, Ga.
Harris, Isabel J., Baton Rouge, La.
Harris, Jeanne G., Chicago, Ill.
Harris, Jerry L., Riverside, Calif.
Harris, Marilyn, Dallas, Tex.
Harris, Mary J., Chickasha, Okla.
Harris, Robert A., Sacramento, Calif.
Harris, Rosemary, Fulton, Mo.
Harris, S. Louise, Morganton, N.C.
Harrison, Barbara, Dallas, Tex.
Harrison, Dema, Fulton, Mo.
Harrison, Duane, Ogden, Utah
Harrison, Dr. Lloyd A., Fulton, Mo.
Harrison, Yita, Scottsdale, Ariz.
Harston, Kathlyn A., Houston, Tex.
Hart, Barbara, Santa Fe, N. Mex.
Hart, Verna, Pittsburgh, Pa.
Hartley, Harold V., Jr., Clarion, Pa.
Hartley, Mrs. Joseph C., Jackson, Miss.
Hartley, Nancy K., Lenoir, N.C.
Hartnett, Judith, Lombard, Ill.
Hartung, Joseph E., Atlanta, Ga.
Hartwell, Richard, Clackamas, Oreg.
Harvey, Martha L., Morganton, N.C.
Harvey, Nedra, Rochester, N.Y.
Haskins, Doris, Detroit, Mich.
Hastlett, Marcia, Lincoln, Nebr.
Hassell, Jerry G., Austin, Tex.
Hassler, Susan, Decatur, Ga.
Hastings, T. Bill, Morganton, N.C.
Hatch, Pamela, Rochester, N.Y.
Haught, Dan R., Romney, W. Va.
Havis, Donald S., San Jose, Calif.
Hawkins, Larry, Sulphur, Okla.
Hawks, Janet, Portland, Maine
Hawrylak, Chris A., Fairport, N.Y.
Hawthorne, Linda D., Lubbock, Tex.

Hayden, Eleanor D., Baltimore, Md.
Hayden, Jean, Clifton, Va.
Hayek, Allen J., Devils Lake, N. Dak.
Hayes, Ann, Seattle, Wash.
Hayes, Brenda, Spartanburg, S.C.
Hayes, Dorothy M., Madison, Wis.
Hayes, Mary Beth, Montgomery, Ala.
Hayes, Mary L., Lawndale, Calif.
Hayes, Miriam F., West Hartford, Conn.
Hayman, Betty, Little Rock, Ark.
Hays, Nita V., Fresno, Calif.
Haywood, Cheryl L., Dallas, Tex.
Hazen, Walter, St. Augustine, Fla.
Healt, Edith W., Rochester, N.Y.
Heather, Nancy, Ann Arbor, Mich.
Heaton, Kathy-lynn, Riverside, Calif.
Heavner, David S., Lincolnton, N.C.
Heavner, Judy C., Tallahassee, Fla.
Hebein, Jeanne, Puyallup, Wash.
Heber, Waldo N., Knoxville, Tenn.
Hecker, Virginia, Salt Lake City, Utah
Hedrick, Ora Lu, Santa Fe Springs, Calif.
Heffernan, Patricia K., Rochester, N.Y.
Hefferon, Margaret, Glen Burnie, Md.
Hegg, Linda, Sioux Falls, S. Dak.
Heidinger, Virginia, Washington, D.C.
Heiney, Kay, Stevens Point, Wis.
Heintzelman, Rae L., Hollywood, Calif.
Heller, Nancy, Indianapolis, Ind.
Hellman, Priscilla, Forest Hills, N.Y.
Helphenstine, Patricia P., Mundelein, Ill.
Helton, Richard H., Danville, Ind.
Henderson, Betty L., Morganton, N.C.
Henderson, Charles R., Morganton, N.C.
Henderson, Mrs. W. P., Omaha, Nebr.
Hendren, Rosemarie, Oklahoma City, Okla.
Hendricks, Sister Mary, Buffalo, N.Y.
Hendricks, Paula, Colorado Springs, Colo.
Hendricks, Susan, Phoenix, Ariz.
Heney, Margaret E., No. White Plains, N.Y.
Henkels, Milo P., Adrian, Mich.
Henneberry, Mary, Brooklyn, N.Y.
Hennessy, Anne E., Antrim, N.H.
Henslee, Mary J., North Little Rock, Ark.
Hensley, Andrew, Knoxville, Tenn.
Hensley, Jack H., Austin, Tex.
Hensley, Norma L., Austin, Tex.
Henwood, Norman, Portland, Oreg.
Herbst, Judy, Palmyra, Wis.
Herden, Elsie J., Webster, N.Y.
Herman, Thomas, Ogden, Utah
Hermanson, Veralyn, Tucson, Ariz.
Hermsen, Mrs. Dale, Brighton, Mich.
Herrick, Helen M., Philadelphia, Pa.
Herring, Patricia, Wichita, Kans.
Herriott, Edith P., Romney, W. Va.
Herrmann, Elaine A., Pittsburgh, Pa.
Herrold, Mary D., Romney, W. Va.
Herschkowitz, Marilyn, Flushing, N.Y.
Hersh, Susan S., Los Angeles, Calif.
Hersey, Barbara, Richmond, Va.
Hertz, Donna, Brush Prairie, Wash.
Herward, Pamela A., Pittsburgh, Pa.
Herzog, Virginia R., Dallas, Tex.
Hesdorffer, Arlene, Dallas, Tex.
Hess, Dr. D. Wilson, Rochester, N.Y.
Hester, James, Danville, Ky.
Hesvik, Myrna, Sioux Falls, S. Dak.
Heubusch, Cornelia D., McLean, Va.
Heuser, Dorothea, Lincoln, Nebr.
Hewitt, Patricia R., Hartford, Conn.
Hewett, Ruby Mae, Rome, Ga.
Hewis, Andrew, Cleveland Heights, Ohio
Hickey, Joan, Pittsburgh, Pa.
Hickman, Belinda K., San Antonio, Tex.
Hickman, Jesse C., Austin, Tex.
Hickman, Marsha D., Morganton, N.C.
Hickman, Theresa, Trenton, N.J.
Hicks, Audrey C., Houston, Tex.
Hicks, Bette D., Frederick, Md.
Hicks, Bruce, Treynor, Iowa
Hicks, Dr. Doin, Washington, D.C.
Hicks, Janet N., Knoxville, Tenn.
Hicks, Shirley, Omaha, Nebr.
Hiett, Nita J., Tucson, Ariz.
Higgins, Catherine, Washington, D.C.
Higgins, Francis, Washington, D.C.
Higgins, Mildred, West Hartford, Conn.
Higgins, Pamela, Evanston, Ill.
Higgins, Paul, Beltsville, Md.
Highnote, Emmalee J., Cave Spring, Ga.
Highnote, Margaret L., Avondale Estates, Ga.
Hilke, Rosemary O., Scotts Mills, Oreg.
Hill, Aline, Knoxville, Tenn.
Hill, Beulah, North Hollywood, Calif.
Hill, Charles V., Glen Alpine, N.C.
Hill, Jerry, Sulphur, Okla.
Hill, Judith Lynn, Little Rock, Ark.
Hill, Samuel A., Austin, Tex.
Hill Velda, Ada, Okla.
Hilliard, Rita, Sulphur, Okla.
Hinant, Leora, West Hartford, Conn.
Hindsman, Betty R., Raleigh, N.C.
Hines, Rudolph, Washington, D.C.
Hines, Walter E., Council Bluffs, Iowa
Hinkle, Candyce, Little Rock, Ark.
Hinkle, John, Fairfax, Va.
Hinnant, Mr. Leslie, Rochester, N.Y.
Hippe, Flo Ellen, Great Falls, Mont.
Hirschenbein, Sheri, Elmwood Park, Ill.
Hirte, Darrell, Anchorage, Alaska
Hirte, Elana, Anchorage, Alaska
Hitzman, Marcia A., Washington, D.C.
Hnatow, Andrew, Plainwell, Mich.
Hoag, Sister Mary Linus, S.C., Pittsburgh, Pa.
Hoag, Dr. Ralph L., Rochester, N.Y.
Hobart, Barbara, Newark, Del.
Hobb, Georgia R., Nashville, Tenn.
Hochweg, Susan, Brooklyn, N.Y.
Hodges, Diane Anderson, Beaumont, Tex.

Hodgson, Rev. Daniel A., Garden City, N.Y.
Hodgson, John W., Belleville, Ontario, Canada
Hodnik, Joseph, Olathe, Kans.
Hodock, Irene H., Indianapolis, Ind.
Hoff, Joel R., St. Augustine, Fla.
Hoff, Mary, Tucson, Ariz.
Hoffmeyer, Dr. Ben E., West Hartford, Conn.
Hoffmeyer, Claude, Danville, Ky.
Hoffmeyer, Vera B., West Hartford, Conn.
Hogan, Sister James Lorene, St. Louis, Mo.
Hogan, Patricia C., San Mateo, Calif.
Hogue, Marjorie Susan, Napa, Calif.
Hohnstein, Loraine, Colorado Springs, Colo.
Hoke, Dona, Bowie, Md.
Holcomb, Loretta, Rochester, N.Y.
Holcomb, Marjoriebell, Tustin, Calif.
Holcomb, Roy K., Tustin, Calif.
Holcomb, Sue O., Talladega, Ala.
Holder, John L., Napa, Calif.
Holdt, Betty P., Salem, Oreg.
Hollamby, Harriet R., St. Augustine, Fla.,
Holland, Bernice, Kalamazoo, Mich.
Holland, Michael, Encino, Calif.
Holman, Gary L., Pittsburgh, Pa.
Holmes, Dr. David W., Lee Center, N.Y.
Holmes, Janet, Indianapolis, Ind.
Holmes, Robin, Denver, Colo.
Holste, Dr. Herman M., Bad Axe, Mich.
Holt, C. Jackson, Staunton, Va.
Holt, Geraldyne M., St. Louis, Mo.
Holt, Mary M., Fulton, Mo.
Holt, Richard Timothy, Columbus, Ohio
Holt, Sally, Dayton, Ohio
Holton, Nancy, Santa Cruz, Calif.
Homburg, Linda C., Frederick, Md.
Home, Sue, Seattle, Wash.
Homer, Linda M., Washington, D.C.
Homfeld, Dr. Shirley, San Mateo, Calif.
Honeychuck, Sister Francis Louise, Pittsburgh, Pa.
Hoover, Robert C., Austin, Tex.
Hoover, Robinette C., Austin, Tex.
Hopkins, Linda L., Denver, Colo.
Hopkins, Mary T., Orlando, Fla.
Horan, Martha A., Dallas, Tex.
Horek, Stanford W., Columbus, Ohio
Horn, Charlotte H., Austin, Tex.
Horner, Katherine H., Romney, W. Va.
Horstmann, Dorothy, Shelter Island, N.Y.
Horton, Janet G., Mobile, Ala.
Horvath, Joyce L., Hartford, Conn.
Horvath, Judith, White Plains, N.Y.
Horvath, Richard, Pittsburg, Calif.
Horwitz, N. Rae, Frederick, Md.
Hosfelt, Sally, Omaha, Nebr.
Hotard, Patricia H. Baton Rouge, La.
Hotchkiss, Mary S., Newland, N.C.
Houchin, Elmo, Little Rock, Ark.
Houchins, Dr. Rollie R., Shawnee Mission, Kans.
Houk, George, Indianapolis, Ind.
Houk, Judith, Indianapolis, Ind.
Hourihan, John P., Newark, N.J.
Hourihan, Kathleen, Monmouth Beach, N.J.
House, Jeanne, Atlanta, Ga.
House, Margaret S., Vale, N.C.
Housemeyer, Cynthia, Indianapolis, Ind.
Hovland, Nancy L., Murrysville, Pa.
Howard, Elizabeth T., Highgrove, Calif.
Howard, Mistie Gaye, Jacksonville, Fla.
Howarth, Elizabeth, Vancouver, Wash.
Howell, Rev. Gerard J., New Orleans, La.
Howell, Robert J., Diamond Bar, Calif.
Howell, Ruth F., Frederick, Md.
Howze, James S., Austin, Tex.
Hoxie, James A., Riverside, Calif.
Hoyle, George M., Gooding, Idaho
Hoyle, Mary M., Gooding, Idaho
Hrinko, Jean, Springfield, Ohio
Hritz, Anne S., Riverside, Calif.
Hubbard, Gail W., El Centro, Calif.
Hubbard, Leslie Diana, Kingston, Tenn.
Hubbard, Lillian, Dallas, Tex.
Hubbard, Mary E., Kailua, Hawaii
Hubbard, Winifred, Olathe, Kans.
Huddleston, Molly A., San Antonio, Tex.
Hudek, Judith, Jacksonville, Ill.
Hudson, Doris, Tucson, Ariz.
Hudson, John W., Jr., Danville, Ky.
Hudson, LeNora M., Roff, Okla.
Hudson, Pansy, Olathe, Kans.
Huff, Anna, Delavan, Wis.
Huff, Kenneth F., Delavan, Wis.
Huffman, Beulah, Morganton, N.C.
Hughes, Barbara T., Greensboro, N.C.
Hughes, Robert J., Tucson, Ariz.
Hughes, Terry, Celina, Tex.
Humbert, Lillian C., St. Augustine, Fla.
Hummel, Karyl A., Jacksonville, Ill.
Hummel, Michael R., Jacksonville, Ill.
Humphrey, Mary F., Wilson, N.C.
Humphrey, Richard A., Knoxville, Tenn.
Humphreys, Beverley, Manhattan Beach, Calif.
Hunsaker, Cecelia W., Anaheim, Calif.
Hunt, Dorothy, Tallahassee, Fla.
Hunt, Melody, Chesterfield. Ind.
Hunt, Norene D., Sulphur, Okla.
Hunter, Christopher, Gooding, Idaho
Hunter, Harry C., Fulton, Mo.
Hunziker, Aletha J., St. Augustine, Fla.
Huppe, Mrs. Lindsay D., Glen Alpine, N.C.
Hurd, Uel, Olathe, Kans.
Hurowitz, Lucille, Staunton, Va.
Hursey, Colleen P., Baton Rouge, La.
Hursh, Carl, Monroeville, Pa.
Hurwitz, Tracy A., Penfield, N.Y.

Husak, Frank M., Riverside, Calif.
Husak, Mrs. Glen G., Pittsburgh, Pa.
Hussey, Cherie, Buffalo, N.Y.
Hutchins, Ida, Brattleboro, Vt.
Hutchinson, Meda, Washington, D.C.
Hutto, Luther D., St. Augustine, Fla.
Hyde, Sarah L., Hyattsville, Md.
Hyman, Shirley B., Newport News, Va.

I

Ice, Dale A., Cave Springs, Ga.
Igleheart, Betty, Brattleboro, Vt.
Igleheart, Elliott, Brattleboro, Vt.
Ihfe, Ferne M., Lincoln, Nebr.
Iker, Rita, Rochester N.Y.
Iliff, Virginia V., Mesa, Ariz.
Imboden, Jean C., Jacksonville, Ill.
Imme, Nicholas J., Baton Rouge, La.
Ingram, Robert, Madison Heights, Mich.
Inwood, Julie, Homewood, Ill.
Irgens, Henning C. F., Plainwell, Mich.
Irving, Margaret H., Danville, Ky.
Irwin, Vincent, Albany, Calif.
Ishikawa, Susan, San Jose, Calif.
Ittig, Louise, East Meadow, N.Y.

J

Jach, Roberta M., Antioch, Ill.
Jack, D. Bruce, Winnipeg, Manitoba, Canada
Jacobs, Beth, Bowling Green, Ohio
Jacobs, Eunice, Waterville, Minn.
Jacobs, Joanne, Olney, Md.
Jacobs, Joanne, Austin, Tex.
Jacobs, John, Austin, Tex.
Jacobs, Lawrence, Seattle, Wash.
Jacobs, Leo M., Oakland, Calif.
Jacoff, Norman, New Rochelle, N.Y.
Jaech, Timothy A., Riverside, Calif.
Jaeger, Gene, Seal Beach, Calif.
Jaenichen, Cora Lee, Gooding, Idaho
Jamar, Juaneva, Phoenix, Ariz.
Jambor, Lenora F., Livonia, Mich.
James, J. Michael, Southington, Conn.
Jamison, Alba D., Los Altos, Calif.
Janke, Mariellen, Milwaukee, Wis.
Jankoff, Jacqueline, New York, N.Y.
Janssens, Corrine R., Raleigh, N.C.
Jaworski, Mary Ann, Ypsilanti, Mich.
Jaynes, Diane C., St. Augustine Beach, Fla.
Jeffers, Marilyn, Little Rock, Ark.
Jefferson, Sonia W., Baton Rouge, La.
Jemison, Margaret, North Hollywood, Calif.
Jenkins, Lorraine L., Salem, Oreg.
Jennings, Cristine, Pasadena, Calif.
Jennings, Mrs. George, Jackson, Miss.
Jensen, Donald, Ogden, Utah
Jensen, James D., Rochester, N.Y.
Jensen, Verl, Salt Lake City, Utah
Jez, Lee, Martina Del Ray, Calif.
Jimcosky, Theresa Ann, Scranton, Pa.
Jirau, Alba, Lares, Puerto Rico
Jobe, Joyce, Jacksonville, Ill.
Johns, Stephen G., Greeley, Colo.
Johnson, Beth, Skokie, Ill.
Johnson, Carla, Pittsburgh, Pa.
Johnson, Charles H., Jr., Talladega, Ala.
Johnson, Cherrian T., Baton Rouge, La.
Johnson, Cheryl M., St. Augustine, Fla.
Johnson, Daniel, Hometown, Ill.
Johnson, Dr. Donald D., Rochester, N.Y.
Johnson, Donna L., West Covina, Calif.
Johnson, Efford, Council Bluffs, Iowa
Johnson, Sister Eileen, Pittsburgh, Pa.
Johnson, Emma L., Rome, Ga.
Johnson, Gerald L., Philadelphia, Pa.
Johnson, Jackie, St. Augustine, Fla.
Johnson, Mrs. Legia, Salt Lake City, Utah
Johnson, Lorna, Rome, N.Y.
Johnson, Louise P., Frederick, Md.
Johnson, Luetta, Lead, S. Dak.
Johnson, Lynn, Westminster, Calif.
Johnson, Margaret E., Newport News, Va.
Johnson, Mary Ellen, St. Augustine, Fla.
Johnson, Mary Jo, Drexel, N.C.
Johnson, Norris, Rome, Ga.
Johnson, Penelope, Jacksonville, Ill.
Johnson, Robert J., Jr., Long Beach, Calif.
Johnson, Ruth, Little Rock, Ark
Johnson, Virginia W., Wilson, N.C.
Johnson, William C., Austin, Tex.
Johnson, William Page, Minneapolis, Minn.
Johnston, Mrs. B. L., Jackson, Miss.
Johnston, George Wm., New York, N.Y.
Johnston, Judy, Talladega, Ala.
Johnston, Sandra Y., Huntsville, Ala.
Jonas, Dr. Arthur, Union, N.J.
Jones, Aleen, Hooper, Utah
Jones, Barbara, Fulton, Mo.
Jones, Dr. Barbara L., Jacksonville, Fla.
Jones, Barry W., Rome, N.Y.
Jones, Betty L., Watsonville, Calif.
Jones, Bernhardt E., Tucson, Ariz.
Jones, Carolyn, Champaign, Ill.
Jones, Carolyn, Urbana, Ill.
Jones, Dale, Staunton, Va.
Jones, Earle, Seattle, Wash.
Jones, Elizabeth, Fulton, Mo.
Jones, Gale J., Cave Spring, Ga.
Jones, Gregory W., New York, N.Y.
Jones, Janet L., Lake Jackson, Tex.
Jones, Janice, Vancouver, Wash.
Jones, Kate-Helen, Asbury Park, N.J.
Jones, Katherine, Jacksonville, Ill.
Jones, Lillie Dell, Jackson, Miss.
Jones, Lois, Vancouver, Wash.
Jones, Louis C., Jackson, Miss.
Jones, Mary E., Rome, Ga.
Jones, Melody L., Clarkston, Ga.
Jones, Michael L., Rochester, N.Y.
Jones, Richard M., Apollo, Pa.

Jones, Robert S., Raleigh, N.C.
Jones, Sarah E., Spartanburg, S.C.
Jonsson, Ruth A., Jacksonville, Ill.
Jordan, Jerald, Washington, D.C.
Jordan, Shirley, Washington, D.C.
Jorgensen, Constance M., Seattle, Wash.
Joseph, Ida, Trujillo Alto, P.R.
Josseph, Jean, Wethersfield, Conn.
Joseph, Jean, Pittsburgh, Pa.
Joseph, Sister Thecla, Buffalo, N.Y.
Joshua, Valree, Vancouver, Wash.
Joy, Sheila D., Howell, Mich.
Joyce, Dennis Gerald, Hammonton, N.J.
Joyce, Sister Scholastica, Pittsburgh, Pa.
Joyner, Sandra, Searcy, Ark.
Junkerman, Anne T., Wauwatosa, Wis.
Justl, Mary C., Napa, Calif.

K

Kacsh, Judith, Skokie, Ill.
Kaczmarcik, Irene, Olyphant, Pa.
Kadish, Arlene, Hartsdale, N.Y.
Kahn, Sheila, Riverside, Calif.
Kalyvas, Anne B., Pittsburgh, Pa.
Kamansky, Annabelle, Los Angeles, Calif.
Kamm, Babette, St. Augustine, Fla.
Kamrowski, Gail M., Buffalo, N.Y.
Kamuchy, Evelyn, Austin, Tex.
Kanning, Leore P., Gooding, Idaho
Kantor, Claire, Oakland, N.J.
Kaplan, Harriet, Silver Spring, Md.
Karben, Frank R., Vancouver, Wash.
Karcinell, Barbara, Long Beach, N.Y.
Karman, Judith Ann, Tacoma, Wash.
Karpen, Gertude G., Chicago, Ill.
Karpf, Susan, Savannah, Ga.
Karwacki, Joan, Pleasanton, Calif.
Kastel, Oliver, Vancouver, Wash.
Katz, Nancy G., Reisterstown, Md.
Katz, Susan, Newark, Del.
Kaufman, Dorothy, Jacksonville, Ill.
Kaufman, Gordon Lee, Santa Fe, N. Mex.
Kaufman, Helen, Brooklyn, N.Y.
Kaufman, Mira Jean, Lubbock, Tex.
Kaufmann, Margaret A., Jacksonville, Ill.
Kayes, Nina S., Eureka, Calif.
Kean, Janet, Princeton, N.J.
Kearley, Frances W., Talladega, Ala.
Kearney, James J., Kensington, Md.
Keck, Timothy A., Spartanburg, S.C.
Keefe, Thomas, Baltimore, Md.
Keefer, Keith B., Salem, Oreg.
Keenan, Susan, Rochester, N.Y.
Keener, Nancy D., Springfield, Va.
Keil, Sandra, Phoenix, Ariz.
Keith, John P., Jackson, Miss.
Keith, Patricia W., San Antonio, Tex.
Keizer, Lois, Cleveland, Ohio
Kelleher, Barbara, Sioux Falls, S. Dak.
Kelleher, Judith, Cheektowaga, N.Y.
Keller, James, Tucson, Ariz.
Keller, Maryanne M., Fredonia, N.Y.
Keller, Phyllis R., Scarsdale, N.Y.
Kelley, Walter Paul, Ferris, Tex.
Kellog, Barbara W., Mt. Clemens, Mich.
Kellogg, Robert C., Indianapolis, Ind.
Kelly, Barbara W., West Covina, Calif.
Kelly, David L., Rochester, N.Y.
Kelly, Elizabeth, Hartsdale, N.Y.
Kelly, Jane F., Tucson, Ariz.
Kelly, Robert E., Portland, Maine
Kelly, Suzanne, Delavan, Wis.
Kelton, Anne G., Dallas, Tex.
Kemp, Edna F., Cave Spring, Ga.
Kendrick, Ronald G., Danville, Ky.
Kenealy, Mary E., Berwin, Ill.
Kennedy, Ann E. C., Amherst, Nova Scotia, Canada
Kennedy, Paul T., Elmsford, N.Y.
Kenney, Sister Karen, Brooklyn, N.Y.
Kensicki, Nancy, Washington, D.C.
Kent, Alice A., Cleveland Heights, Ohio
Kent, Margaret S., Braddock Heights, Md.
Kerikas, Sharon M., Salt Lake City, Utah
Kerr, Edna M., St. Augustine, Fla.
Kerr, Etta C., St. Augustine, Fla.
Kerr, G. Bryce, Council Bluffs, Iowa
Kerr, Thomas, St. Augustine, Fla.
Kersbergen, Ronald, Sioux Falls, S. Dak.
Kessel, Linda, Washington, D.C.
Kessen, Sister Anna, Buffalo, N.Y.
Kessler, Jennifer, Blasdell, N.Y.
Kessler, Marcia S., Huntington Beach, Calif.
Kessler, Evelyn E., Staunton, Va.
Ketchum, Jack, Muskegon, Mich.
Key, John W., Austin, Tex.
Kicey, Patricia B., Wenonah, N.J.
Kidd, Lois, Little Rock, Ark.
Kilani, Barbara, DeKalb, Ill.
Kilkenny, Sharon L., Wheeling, Ill.
Killam, Doris, San Angelo, Tex.
Kilpatrick, Bonnie, Tallahassee, Fla.
Kimberlin, Gregory C., Los Angeles, Calif.
Kimmel, Rev. Eugene, Troy, Ohio
Kimpton, Luanne, Tucson, Ariz.
Kincaid, Wilma S., Sulphur, Okla.
Kinde, Stewart W., Tampa, Fla.
Kindred, Elizabeth M., Arlington, Va.
King, Beverly J., Renton, Wash.
King, Burton B., Durham, N.C.
King, Crockett W. II, Norton, Va.
King, Dorothy, Knoxville, Tenn.
King, Jane, Sioux Falls, S. Dak.
King, Jess Freeman, Baton Rouge, La.
King, Linda, Elmhurst, N.Y.
King, Roberta J., Ann Arbor, Mich.
King, Rose C., Hampton, Va.
King, William Jr., Indianapolis, Ind.
Kinitsky, Howard, Kew Gardens, N.Y.
Kinnett, Cheryll, Jacksonville, Ill.

Kinzer, L. Marilyn, Sedgewick, Kans.
Kirby, Sister Alice Mary, Randolph, Mass.
Kirchhoff, Lucille M., Pontiac, Mich.
Kirchner, Carl J., Granada Hills, Calif.
Kirk, Sister M. Regina, Buffalo, N.Y.
Kirkley, Lucille, Colorado Springs, Colo.
Kirkpatrick, Mildred B., Sulphur, Okla.
Kirksey, Mary H., Morganton, N.C.
Kirtley, Alexander, Staunton, Va.
Kirwan, Norma, Washington, D.C.
Kiser, Cynthia, Cave Spring, Ga.
Kiser, Joan M., Tucson, Ariz.
Kiskaddon, Fay W., Evergreen, Colo.
Kissel, Barbara, Seattle, Wash.
Kitchen, Patricia A., Riverside, Calif.
Kitson, Donald, St. Augustine, Fla.
Kitson, Mona, St. Augustine, Fla.
Kitz, Hilary A. D., Cambridge, Mass.
Kleberg, Robert E., Austin, Tex.
Klein, Mildred, Sioux Falls, S. Dak.
Klein, Wendy, Huntington, N.Y.
Kleinman, Elsa C., Berkeley, Calif.
Klenke, Rev. Paul F., Cincinnati, Ohio
Kleper, Michael, Rochester, N.Y.
Kliefgen, Mary F., Evergreen Park, Ill.
Kline, Lorraine F., Jacksonville, Ill.
Kling, Cheryl P., Colorado Springs, Colo.
Klodd, Bonita, Wausau, Wis.
Klopping, Henry W. E., Washington, D.C.
Klopping, Sandra L., Washington, D.C.
Kloster, Louanne, Olathe, Kans.
Knapp, Sally, Sante Fe, N. Mex.
Knauf, Marge, Stevens Point, Wis.
Knight, Doris, Amherst, Nova Scotia, Canada
Knight, Mary J., N. White Plains, N.Y.
Knoff, Kathryn A., Columbus, Ga.
Knott, Patricia G., Las Vegas, Nev.
Knox, Susan, Durham, N.C.
Koch, Fred L., Rochester, N.Y.
Koch, Hartley, Washington, D.C.
Koch, JoAnn, Rochester, N.Y.
Koch, Richard L., Staunton, Va.
Koenig, Mary, Pittsburgh, Pa.
Koepke, Kim M., Dallas, Tex.
Koepke, Nancy, Elgin, Ill.
Koester, Miriam, Gooding, Idaho
Kohl, Judith A., Kenmore, N.Y.
Koiziumi, Gail K., Cincinnati, Ohio
Kokocinski, Sister Carol, Buffalo, N.Y.
Kolon, Annette B., Warren, Mich.
Kolpp, Maryan L., Albuquerque, N. Mex.
Komori, Hiroko, Colton, Calif.
Kondas, Janet, Indianapolis, Ind.
Konte, Sharon, Pittsford, N.Y.
Kornblith, Anne, Hyattsville, Md.
Korneth, Gwendolyn, Sunnyside, N.Y.
Korschgen, Marjorie S., Jacksonville, Ill.
Kosydar, Andrea, Olyphant, Pa.
Kovatch, Robert A., Indianapolis, Ind.
Kowalewski, Felix, Riverside, Calif.
Kowalewski, Laura, Riverside, Calif.
Koziar, Stephen, Fulton, Mo.
Kozier, Anna, Fulton, Mo.
Kraemer, Margaret E., Brattleboro, Vt.
Kraft, Barbara L., Baton Rouge, La.
Krahe, Mrs. James B., Tustin, Calif.
Kramer, Arlene, University Park, Pa.
Krasin, Gertrude, Santa Fe, N. Mex.
Kraus, Don, Staunton, Va.
Kreamer, JoAnne K., Danville, Ky.
Krell, Dennis J., Seattle, Wash.
Kriehn, George J., Dallas, Tex.
Kritz, Kenneth W., Frederick, Md.
Kritzer, Lorine, New York, N.Y.
Krone, Emmylou, Council Bluffs, Iowa
Krone, Norma J., Urbana, Ill.
Krueger, Christine S., Indianapolis, Ind.
Kreummer, Edward H., Austin, Tex.
Krug, Adele, Washington, D.C.
Krug, Richard F., Boulder, Colo.
Kruhm, Deborah W., Santa Fe, N. Mex.
Kruse, Edwin, Rochester, N.Y.
Kruse, Warren, Council Bluffs, Iowa
Kubis, John, Rochester, N.Y.
Kubotsu, Teruko, Riverside, Calif.
Kugal, Anita S., Morganton, N.C.
Kugal, Stephen, Morganton, N.C.
Kukleski, Audrian, Braddock, Pa.
Kupfer, R. S., Corte Madera, Calif.
Kurashige, Joan Y., Honolulu, Hawaii
Kurs, Mitchell I., New Carrollton, Md.
Kurth, Donald D., Urvandale, Iowa
Kurtz, Clara, Fulton, Mo.
Kushner, Alice, Pasadena, Md.
Kushner, Marcia, Lincoln, Nebr.
Kutnyak, Martin M., Toledo, Ohio
Kutzera, Bert, Springfield, Ill.
Kuzoian, B. Jane, Upper Marlboro, Md.
Kyle, Linda S., Knoxville, Tenn.
Kyproula, Makri, Nicosia, Cyprus
Labbo, Suzanne, San Antonio, Tex.
LaBeff, Daniel B., Honolulu, Hawaii
Lacey, Carolyn M., Austin, Tex.
Lachapelle, Joan S., Aumsville, Oreg.
Lachterman, Daryl, London, England
LaConte, Patricia, Muncie, Ind.
Ladner, Suzanne, Cumberland Center, Maine
Ladouceur, Roger, Manchester, N.H.
Lafeman, Jack, Vancouver, Wash.
Laffoon, Sylvia, Great Falls, Mont.
Lagnese, Adelaide, Washington, D.C.
Lahcanski, Vesela, Rochester, N.Y.
Lahm, Joan, Tucson, Ariz.
Lake, Florence, Devils Lake, N. Dak.
Lalor, Thomas M., North Hollywood, Calif.
Lamb, Alfred J., Indianapolis, Ind.
Lamb, Patricia, Janesville, Wis.
Lamee, Clyde, St. Augustine, Fla.
Lamirade, Linda, Omaha, Nebr.
Lamm, Carolyn, Spartanburg, S.C.
Landau, Beth, Oceanside, N.Y.
Lander, Sister Rose M., Buffalo, N.Y.

Lane, Elnora B., Hampton, Va.
Lane, Helen W., Ogden, Utah
Lane, Kenneth R., Middle Haddam, Conn.
Lane, Richard K. Brattleboro, Vt.
Lang, Harry G., Rochester, N.Y.
Lang, Susan, San Antonio, Tex.
Lange, Keith F., Salem, Oreg.
Lange, Rebecca, Los Angeles, Calif.
Lange, Robert W., St. Augustine, Fla.
Langer, Barbara, Franklin Square, N.Y.
Lanham, Isabel, Fulton, Mo.
Lanzi, Peter, Riverside, Calif.
LaPlace, Victor, New York, N.Y.
Lapp, Margaret, Vancouver, British Columbia, Canada
Laptad, Marese, Olathe, Kans.
Laptad, Ruth, Olathe, Kans.
Lara, Sylvia, San Antonio, Tex.
Laramie, Dora, Bountiful, Utah
Larkin, Dierdre M., Los Angeles, Calif.
Larsen, Harold C., Indianapolis, Ind.
Larson, Alfred D., Mission, Kans.
Larson, Janet E., West Hartford, Conn.
Larson, Joan, Ipswich, Mass.
Larson, Patricia J., Galveston, Tex.
LaRue, Mary, Washington, D.C.
LaSasso, Carol, Washington, D.C.
Lassen, Blanche, Irvington, N.J.
Lassiter, Penelope L., Portsmouth, Va.
Latham, Gladys, Cave Spring, Ga.
Latimer, Esperanza C., Santa Fe, N. Mex.
Lauer, Francine M., Flint, Mich.
Laufer, Hazel, Rome, N.Y.
Lawson, Betty, Knoxville, Tenn.
Lawson, Pat R., Roff, Okla.
Lawson, Robert, Knoxville, Tenn.
Lawyer, Evelyn, Rosemead, Calif.
Lazar, Zena, Brooklyn, N.Y.
Lazarus, Beverly, New City, N.Y.
Lazzari, Nina, Washington, D.C.
Lazzaro, Virginia, Omaha, Nebr.
Leath, Mr. C. J., Mesquite, Tex.
LeBuffe, Leon, Washington, D.C.
LeCavalier, Diane, Lakewood, Colo.
Leckie, Mrs. R. G., Montreal, Quebec, Canada
Ledet, Sister Eymard, Scott, La.
Lee, Carmen, Devils Lake, N. Dak.
Lee, Dennis A., Austin, Tex.
Lee, Dorothy W., Wilson, N.C.
Lee, Mahn K., Honolulu, Hawaii
Lee, Martha E., Houston, Tex.
Lee, Milton, Delavan, Wis.
Lee, Rena, Salem, Oreg.
Lee, Sally A., Jackson, Miss.
Lee, Sharon K., Austin, Tex.
Lee, Virginia, Sacramento, Calif.
Lee, Wanda, Williston Park, N.Y.
Leech, Virginia C., Carnegie, Pa.
Leeds, Naomi, Bayside, N.Y.
Lefco, Beth D., Atlanta, Ga.
Legard, Aquila A., Baton Rouge, La.
Lehnert, Corinne E. G., Baltimore, Md.
Lehrer, Noel, Yonkers, N.Y.
Lehrman, Sunny M., Groton Long Point, Conn.
Lehto, Marian, Eugene, Oreg.
Leighton, Edwin, Gambrills, Md.
Leinbach, Daniel P., Riverside, Calif.
Leman, Charles W., Flint, Mich.
LeMarr, Mary, Knoxville, Tenn.
Lemeke, Margaret, Vancouver, Wash.
LeMieux, Robert, Great Falls, Mont.
Lemonds, Cheryl H., Memphis, Tenn.
LeNard, Judith M., Lanham, Md.
Lennhan, Robert K., Riverside, Calif.
Lennon, Patricia A., Bronx, N.Y.
Lenox, James P., Morrisville, Pa.
Lenth, J. Wm., Tacoma, Wash.
Leonard, Sister David M., Pittsburgh, Pa.
Leonardi, Irene, Trenton, N.J.
Leonhardt, Sonja M.C., Devils Lake, N. Dak.
Leonowich, Toni, E. Setauket, N.Y.
Lependorf, Steven, Brooklyn, N.Y.
Lepisto, Helmi, Rock, Mich.
Leroy, Barbara, Sandy, Oreg.
LeRoy, Sister M. Pauline, Buffalo, N.Y.
Lesesne, Ruth C., Austin, Tex.
Lesser, Sister Rosemary, Brooklyn, N.Y.
Lester, Jeanette J., Lansing, Mich.
Lester, Sara J., Fairbanks, Ind.
LeTourneau, Clifford E., Portland, Oreg.
Letourneau, Sister Nora, Buffalo, N.Y.
Levene, Rita L., Mt. Prospect, Ill.
Levine, Edna, New York, N.Y.
Leviner, Peggy G., Morganton, N.C.
Leviton, Susan, Cherry Hill, N.J.
Levy, Lois E., Houston, Tex.
Levy, Ellen, Tucson, Ariz.
Lewin, Mary H., Hanover Park, Ill.
Lewis, A. P., Sulphur, Okla.
Lewis, Carol J., St. Augustine, Fla.
Lewis, Hugh, St. Augustine, Fla.
Lewis, Lauri, Denver, Colo.
Lewis, Lucy A., Riverside, Calif.
Liberato, Joan E., Verona, N.J.
Lidestrand, Kay, Omaha, Nebr.
Liess, Anne E., Rochester, N.Y.
Liffengren, Luceal G., Omaha, Nebr.
Lightle, Jaymme S., Kansas City, Mo.
Likes, Henry, Jr., Winchester, Utah
Liles, Eleanor H., Wilson, N.C.
Lill, Daniel, Rochester, N.Y.
Limoli, Frank, Brooklyn, N.Y.
Lindblom, Elsie, Portland, Maine
Linder, Lois, Geneva, Ill.
Linder, Rose E., Floral Park, N.Y.
Lindquist, Deana, Libertyville, Ill.
Lindsey, David M., Virginia Beach, Va.
Lindstrom, August, Wethersfield, Conn.
Lindstrom, Evelyn, Gooding, Idaho
Line, Harriett A., St. Augustine, Fla.
Linfante, Carmelita, Ventnor City, N.J.
Ling, Dr. Daniel, Montreal, Quebec, Canada

Lingerfelt, Marilyn, Morganton, N.C.
Linton, Leomia R., Rochester, N.Y.
Linzey, Robert W., Romney, W. Va.
Lioz, Carol, Rockville Centre, N.Y.
Liston, Lynn, Batavia, Ill.
Litchfield, Kendall D., White Plains, N.Y.
Little, James A., Santa Fe, N. Mex.
Littman, Linda A., Hairston, Tex.
Liu, Emma L. S., Monroeville, Pa.
Lively, Lois, Rome, Ga.
Llanes, Haydee M., Panorama City, Calif.
Lloyd, Brigidann, Brooklyn, N.Y.
Lloyd, Ethel L., Jackson, Miss.
Lloyd, John B., St. Augustine, Fla.
Lloyd, Lyle L., Washington, D.C.
Lloyd, Marie, Vancouver, Wash.
Lobherr, Mary R., Riverside, Calif.
Lockaby, Linda D., Spartanburg, S.C.
Locker, Connie, Devils Lake, N. Dak.
Lockhart, Betty, Little Rock, Ark.
Loebel, Geoffrey A., Santa Fe, N. Mex.
Lofgren, Susan A., Randolph, Mass.
Loftus, Marie M., Scranton, Pa.
Logan, Carole, Las Vegas, Nev.
Logan, Diane L., Lompac, Calif.
Logan, Janice L., Salem, Oreg.
Lohman, Edith D., Arlington, Va.
Lombardi, Ann, Cheektowaga, N.Y.
Long, Mary M., Spartanburg, S.C.
Long, Rebecca R., St. Laurent, Quebec, Canada
Longbine, Marcia A., Pomona, Calif.
Longlois, Mary, Washington, D.C.
Loomis, Sharon A., Clare, Mich.
Looney, Patricia, Columbus, Ohio
Loop, Susan F., Pittsburgh, Pa.
Lorentz, Joan, Cambridge, Mass.
Lorentz, Sister M. Germain, Portland, Oreg.
Losey, Julie, Champaign, Ill.
Loughin, Bertha N., Falmouth Foreside, Maine
Loughran, Rosalin D., Riverside, Calif.
Loutrel, Louis P., Rochester, N.Y.
Love, Sara K., Staunton, Va.
Lovelace, Frances, Talladega, Ala.
Loveland, Thomasina K., New Britain, Conn.
Lowe, Carol, New Orleans, La.
Lowe, Elizabeth L., St. Augustine, Fla.
Lowell, Edgar L., Los Angeles, Calif.
Lowell, Neil F., Delavan, Wis.
Lowenbraun, Sheila, Seattle, Wash.
Lowery, Barbara, Toledo, Ohio
Lowry, Jeanne E., Gaithersburg, Md.
Loysen, Garry, Rochester, N.Y.
Lubbers, Earl R., Tucson, Ariz.
Lubera, Joan, Mt. Prospect, Ill.
Lubin, Belinda, Dallas, Tex.
Lucas, Arlene, Pittsburgh, Pa.
Ludivico, Ruth G., Pittsburgh, Pa.
Ludwig, Mrs. Warrene, Aubrey, Tex.
Lumpkin, Peggy D., Jonesboro, Ga.
Lumpkins, Janette, Portland, Maine
Lund, Elizabeth, Sulphur, Okla.
Lundmark, Susan M., Berkeley, Calif.
Lunestad, Sandra, St. Augustine, Fla.
Luptak, Beverly M., Chicago, Ill.
Lurwick, Donald R., Romney, W. Va.
Luster, Gary D., Broomfield, Colo.
Luterman, David, Lexington, Mass.
Lutz, Kenneth R., Grand Terrace, Calif.
Lutz, Martha, Fulton, Mo.
Lyans, Dorothy W., La Canada, Calif.
Lyas, Esther B., Hampton, Va.
Lykos, Christine M., Las Vegas, Nev.
Lynch, Daniel J., Lafayette, Calif.
Lynch, Irene, Indianapolis, Ind.
Lynch, Sister Jane C., Buffalo, N.Y.
Lynch, Kathleen, Newark, Del.
Lyons, Agnes K., Olyphant, Pa.

Mc

McAdam, Colin, Faribault, Minn.
McAdams, Robert M., Wilson, N.C.
McAfee, Cherry, Seattle, Wash.
McAfee, Ida L., Cleburne, Tex.
McAnally, Patricia, Normal, Ill.
McAuliffe, Barbara M., Hillsdale, N.J.
McBride, Janet E., King of Prussia, Pa.
McBride, Joan, St. Augustine, Fla.
McBride, Robert E., Talladega, Ala.
McBroom, Jacqueline, Indianapolis, Ind.
McCabe, Ann M., West Hartford, Conn.
McCahill, Rev. Patrick, New York, N.Y.
McCain, Miss Willie M., Rome, Ga.
McCall, Joyce D., Valdese, N.C.
McCall, Karen A., Bangor, Maine
McCarr, Dorothy J., Salem, Oreg.
McCarr, James E., Salem, Oreg.
McCartt, Arlie L., Knoxville, Tenn.
McCarty, Oleta D., Sulphur, Okla.
McCaulley, Joanne E., Berkeley, Calif.
McChord, Winfield, Jr., Danville, Ky.
McClain, Lenore, Knoxville, Tenn.
McClain, Sara C., Missoula, Mont.
McClanahan, Rosalie, Fulton, Mo.
McClary, Dorothy, Fulton, Mo.
McClenathan, Sister Melrose T., Buffalo, N.Y.
McClendo, George C., Washington, D.C.
McClure, William J., St. Augustine, Fla.
McCollum, Florence, Great Falls, Mont.
McCollum, Linda A., St. Clair Shores, Mich.
McCollum, Mary, Philadelphia, Pa.
McConnell, Martha, Danville, Ky.
McConnell, William J., Hampton, Va.
McConvey, William, Gasport, N.Y.
McCord, Julianna, Indianapolis, Ind.
McCormack, Eileen, Brooklyn, N.Y.
McCormick, Madeline, Champaign, Ill.
McCracken, Carol, Scottdale, Pa.
McCrae, Edna A., Philadelphia, Pa.
McCrea, Betty C., Baltimore, Md.

McCuaig, W. D. Alex, Toronto, Ontario, Canada
McCubbin, Mona K., Stone Mountain, Ga.
McCulloch, Barbara J., Lincoln, Nebr.
McCullough, Connie, Pittsburgh, Pa.
McCurry, S. Kay, Morganton, N.C.
McDaniel, Mary L., Morganton, N.C.
McDaniel, Rebecca W., Marietta, Ga.
McDermid, Gary, Indianapolis, Ind.
McDermott, Elisabeth F., Brooklyn, N.Y.
McDermott, Margaret P., Romney, W. Va.
McDermott, Maryann, Washington, D.C.
McDermott, Patricia, Brooklyn, N.Y.
McDermott, Raymond M., Omaha, Nebr.
McDonald, Charles D., St. Augustine, Fla.
McDonald, Joy S., Austin, Tex.
McDonald, Loretta A., Honolulu, Hawaii
McDonough, Deborah A., Chattanooga, Tenn.
McDowell, Charlene, Wilson, N.C.
McDowell, Floyd J., Great Falls, Mont.
McDowell, Linda A., Santa Fe, N. Mex.
McElroy, Dierdre W., New York, N.Y.
McFarland, Janice K., Tucson, Ariz.
McGann, Lola, Bellevue, Nebr.
McGarry, Barbara, Riverside, Calif.
McGarry, David A., Riverside, Calif.
McGee, Donald I., Washington, D.C.
McGehee, Louise L., Houston, Tex.
McGill, Daniel G., Austin, Tex.
McGill, David K., Unionville, Conn.
McGill, Dorothy, Vancouver, Wash.
McGill, Gertie E., Austin, Tex.
McGinnis, Martha P., Tulsa, Okla.
McGinnis, Mary D., North Hollywood, Calif.
McGlamery, Sarah J., Las Vegas, Nev.
McGrady, Sister Kathleen, Pittsburgh, Pa.
McGuinness, David, Washington, D.C.
McHamm, Gus C., III, Austin, Tex.
McHugh, Michael, Bloomsburg, Pa.
McIntire, Maryann, Vancouver, Wash.
McIntosh, Vina, Clarkston, Ga.
McIntyre, Patricia D., Beverly, Mass.
McKee, Alvin R., Romney, W. Va.
McKelvy, Mary, Oklahoma City, Okla.
McKenna, Thomas E., Middletown, Md.
McKenney, Kathleen A., Omaha, Nebr.
McKenzie, Kathleen K., Bristol, Va.
McKeon, Ethel P., Stayton, Oreg.
McKeon, James J., Delavan, Wis.
McKeon, Scott, Worthington, Ohio
McKinley, Helen G., Seattle, Wash.
McKinney, Sharon W., Spartanburg, S.C.
McKnight, Carol, Tucson, Ariz.
McLane, Sister Agenes, Pittsburgh, Pa.
McLelland, Helen, Staunton, Va.
McLelland, Paul, Staunton, Va.
McLendon, Gloria, Washington, D.C.
McLennan, Norman J., Salem, Oreg.
McMahan, Joan A., New York, N.Y.
McMahon, Mr. Dale, Baton Rouge, La.
McManamy, Maurine, Council Bluffs, Iowa
McMullin, Thomas J., Pittsburgh, Pa.
McMunn, Norma, Fulton, Mo.
McNair, Evelyn, Ogden, Utah
McNair, Janice, Council Bluffs, Iowa
McNamara, Isabelle, Vancouver, Wash.
McNiel, Rebecca, Baton Rouge, La.
McPeak, Elizabeth T., Pittsburgh, Pa.
McPhedran, Mrs. A. A., Edmonton, Alberta, Canada
McRae, Richard, Baton Rouge, La.
McSwain, Carol, Buffalo, N.Y.
McTiernan, Mary L., Woodcliff Lake, N.J.
McWain, Mary L., Los Altos, Calif.

M

Maas, Mathias, Vancouver, Wash.
Mabry, Ms. Jimmie S., Little Rock, Ark.
MacAskill, Diane A., Madison, Wis.
MacDonald, Geraldine, Amherst, Nova Scotia, Canada
MacDougal, Dr. James C., Montreal, Quebec, Canada
MacDowell, Arden, Jackson, Miss.
Mace, Emmie L., Morganton, N.C.
MacFarlane, Harriet P., Norfolk, Va.
Machado, Madeline, East Rochester, N.Y.
Machos, Karen, Milwaukee, Wis.
Mack, Elizabeth A., Baltimore, Md.
Mack, Phyllis B., Rochester, N.Y.
MacKay, Constance M., Ogden, Utah
Macklin, Georgia F., Ettrick, Va.
MacLean, Coline, Riverside, Calif.
MacNeil, Linda, Lawndale, Calif.
Maddox, Helen J., Taylors, S.C.
Madsen, Willard, Washington, D.C.
Maeser, Doris J., Elizabeth, N.J.
Magill, Medford W., Baton Rouge, La.
Magno, Carmen P., St. Augustine, Fla.
Mahaley, Anne K., Wilson, N.C.
Maharry, Marion F., Hialeah, Fla.
Maher, Mr. Fran, Watertown, Mass.
Mahla, Sister Jeremy, Pittsburgh, Pa.
Mahoney, Patricia A., Van Nuys, Calif.
Maison, Elizabeth J., Beverly Hills, Calif.
Maize, Connie, University, Ala.
Makela, Jean E., Jacksonville, Ark.
Malcolm, Andrew, Penfield, N.Y.
Maley, George, Jacksonville, Ill.
Mallinckrodt, Betty, Fulton, Mo.
Malmberg, Geraldine J., Pittsburgh, Pa.
Malone, Constance J., Flint, Mich.
Malone, Theresa, Brooklyn, N.Y.
Malphurs, Jane D., Jackson, Miss.
Mamula, Annette, Hopwood, Pa.
Manansala, Lourdes, Baltimore, Md.

Mancini, Mary E., Batavia, N.Y.
Mandery, Linda A., North Rose, N.Y.
Mangan, Kenneth R., Jacksonville, Ill.
Mangus, Barbara, Levittown, Pa.
Manley, Rachel M., Houston, Tex.
Mann, Mrs. James, Jr., Virginia Beach, Va.
Mann, Loisteen J., Atlanta, Ga.
Mann. Marion K., Danville, Ky.
Mann, Nancy A., Danville, Ky.
Mannion, Sister Philomena, Pittsburgh. Pa.
Manshel, Hannah, New Rochelle, N.Y.
Mantle, J. Ervin, Salt Lake City, Utah
Mantz, John A., Enon, Ohio
Manzo, Patricia, Covina, Calif.
Marcelle, Mildred K., Baton Rouge, La.
Marcellino, Michael, Larchmont, N.Y.
Margaret, Sister, Chicago, Ill.
Marhefka, Frank B., Uniontown, Pa.
Marino, Rosemarie, New Rochelle, N.Y.
Markey, Francis B., Hinsdale, N.H.
Marks, Connie C., Inglewood, Calif.
Marks, Mary J., Austin, Tex.
Marland, Emily J., Washington, D.C.
Marlin, Gustava P., El Paso, Tex.
Marocchi, Linda, Rome, N.Y.
Marra, William, Olathe, Kans.
Marriner, Rebecca, Washington, Pa.
Marsh, Charles E., Jr., Flint, Mich.
Marsh, Dennis, Rome, N.Y.
Marsh, Kathleen L., Olathe, Kans.
Marsh, L. Allen, Riverside, Calif.
Marshall, Erwin W., Lafayette, Calif.
Marshall, Margaret, Danville, Ky.
Marshall, Marvin J., Carmel, Ind.
Marshall, Phillip, Austin, Tex.
Marshall, Teresa, Carmel, Ind.
Marshall, Miss Zoe A., Jacksonville, Ill.
Martens, Katherine K., Bronx, N.Y.
Martin, Anne, Knoxville, Tenn.
Martin, Bettejane, Washington, D.C.
Martin, Mrs. E. Merle R., Nebo, N.C.
Martin, Elnora, Lyerly, Ga.
Martin, Linda, Washington, D.C.
Martin, Linda I., Steger, Ill.
Martin, Sandra, Ypsilanti, Mich.
Martina, Russell A., Buffalo, N.Y.
Martins, Gary H., Milton, Ontario, Canada
Martucci, Cecilia, Los Angeles, Calif.
Martyka, Emilia, Detroit, Mich.
Marugg, Carol C., LaCenter, Wash.
Marvelli, Alan L., Northampton, Mass.
Mason, Henry, Brooklyn, N.Y.
Mason, Virgyl J., Columbia, Md.
Massey, Linda B., Wilson, N.C.
Massey, Wayland, Council Bluffs, Iowa
Masters, Alice C., Louisville, Ky.
Mathas, Chrysoula, Milwaukee, Wis.
Matheny, Lawrence B., Forest City, N.C.
Mathes, Frances M., Mission Viejo, Calif.
Mathews, Ester D., China Lake, Calif.
Mathewson, Penelope, Alhambra, Calif.
Mathis, Amy, Knoxville, Tenn.
Mathis, Rev. Steve L., III, Baltimore, Md.
Matise, Gretchen, Dover, N.J.
Matkin, Noel D., Northbrook, Ill.
Matlock, Ethlyn, Little Rock, Ark.
Matocha, Valerie E., Green Bay, Wis.
Matthews, Elizabeth S., Jackson, Miss
Matujec, Mary A., Salem, Oreg.
Mauk, Karol B., Kansas City, Kans.
Maupin, Diana, Fulton, Mo.
Mauro, Angela E., Rochester, N.Y.
Mavilya, Marya, Surfside, Fla.
Mavretich, Margaret, Bayside, N.Y.
Maxey, Tom, Rochester, N.Y.
Maxwell, Betsy, Monticello, Ark.
Maxwell, Brenda, West Hartford, Conn
Maxwell, Joseph, Yarmouth, Maine
Maxwell, Madeline M., Tucson, Ari
Maxwell, Nelda, Morganton, N.C.
May, Barbara, Danville, Ky.
May, Carole C., Riverside, Calif.
May, Judith L., Tucson, Ariz.
May, Karl H., Tucson, Ariz.
May, Nadene, Danville, Ky.
May, Tricia A., Atlanta, Ga.
May, William E., Riverside, Calif.
Maye, Thomas J., Morganton, N.C.
Mayer, Sarah J., Torrance, Calif.
Mayes, Thomas A., Washington, D.C.
Marfield, R. E., Wilson, N.C.
Maynard, Hollis, Louisville, Ky.
Mayo, Margaret, Baltimore, Md.
Mays, Mary A., Casper, Wyo.
Mazzanti, Sharon, Little Rock, Ark.
Mazzariello, Jean, Davenport, Iowa
Meacham, Gail, Marietta, Ga.
Meador, Kelly L., Austin, Tex.
Mealka, Alan J., Indianapolis, Ind.
Means, Karen, Eaton, Colo.
Means, Lily F., Long Beach, Calif.
Measels, Evelyn B., Santa Fe, N. Mex.
Meason, Joan, Fayetteville, Ark.
Meath, Bonnie, Rochester, N.Y.
Medeiros, Sarah, Washington, D.C.
Mediran, Virginia A., Columbus, Ohio
Medlock, Hilda, Little Rock, Ark.
Meek, Joanne, Riverside, Calif.
Mehl, Albert F., Morganton, N.C.
Mehlburger, Susan, Little Rock, Ark.
Meier, June, Great Falls, Mont.
Meisegeier, Richard, Washington, D.C.
Meisel, Adrienne, Chicago, Ill.
Meisser, Virginia M., Milwaukee, Wis.
Melancon, Eria F., Baton Rouge, La.
Melendez, Kathy, Louisville, Tenn.
Melton, Sheldon O., Staunton, Va.
Melton, William A. Jr., Aurora, Colo.
Menson, Stanley, Riverside, Calif.
Mercaldo, David, Rochester, N.Y.
Mercurio, Mary A., Newark, N.J.
Merklin, Arthur, Fulton, Mo.
Merlino, Robert, Vancouver, Wash.

Merrill, Edward C. Jr., Washington, D.C.
Messmer, Mary L., Columbus, Ohio
Meyer, Catherine L., Elmhurst, Ill.
Meyer, Hannah C., Oakland, Calif.
Meyer, Leonard J., Yorba Linda, Calif.
Meyer, Mary, Sioux City, Iowa
Meyers, Sister Edna M., Pittsburgh, Pa.
Meyers, Gwendolyn P., St. Thomas, Virgin Islands
Meyers, Harold W. Sr., Oxford, Miss.
Meyers, Sylvia, Highland Park, Ill.
Michael, Carol J., Rochester, N.Y.
Michael, N. Kaye, Fayetteville, Ark.
Michalovic, Rebecca W., Rochester, N.Y.
Michelson, Rhonda, Tucson, Ariz.
Miescher, Frances R., Tucson, Ariz.
Mikaloff, Cindy, Seattle, Wash.
Mikos, Kenneth, Berkeley, Calif.
Milburn, Wanda O., Ann Arbor, Mich.
Miles, Lucy, Staunton, Va.
Milesky, Samuel D., Madison, Wis.
Milford, John, Tucson, Ariz.
Milks, Barbara A., Bayville, N.Y.
Millard, Robert, Spartanburg, S.C.
Miller, Annette, Des Moines, Iowa
Miller, Betty, Washington, D.C.
Miller, Carolyn M., Royal Oak, Minn.
Miller, Mrs. Charles W., Reading, Pa.
Miller, Frederick A., Knoxville, Tenn.
Miller, Jacqueline A., Lansing, Mich.
Miller, Jennifer A., East Rutherford, N.J.
Miller, June, Shawnee Mission, Kans.
Miller, Kenneth W., Vancouver, Wash.
Miller, Loretta, Sioux Falls, S. Dak.
Miller, Lucille V., Northridge, Calif.
Miller, Margaret S., Columbus, Ohio
Miller, Sister Marie C., Pittsburgh, Pa.
Miller, Marlene, Bayville, N.Y.
Miller, Mary T., Tulsa, Okla.
Miller, Michael, Washington, D.C.
Miller, Susan R., Atlanta, Ga.
Miller, Wanda, Oakland, Calif.
Milligan, Bertha, White Plains, N.Y.
Milligan, Kevin, Cheektowaga, N.Y.
Milligan, George T., Hot Springs, Ark.
Milligan, Kevin, Cheektowaga, N.Y.
Milligan, William, White Plains, N.Y.
Mills, Bettina, Talladega, Ala.
Mills, Greer B., Mt. Pleasant, S.C.
Mills, Jack, Annapolis, Md.
Mills, Mary, Muscatine, Iowa
Mills, Thelma, Louisville, Ky.
Mills, William R., Hayward, Calif.
Milner, Leslie R., Amherst, N.S., Canada
Minarich, Ann, Omaha, Nebr.
Ming, Kay G., Austin, Tex.
Minger, Pamela, Upper Marlboro, Md.
Minihan, Helen R., Stony Brook, N.Y.
Mink, Stanley, New York, N.Y.
Minkel, Sarah L., Newton, Pa.
Minnick, Peter, Locust Valley, N.Y.
Minor, Claryce J., Baton Rouge, La.
Minor, Mary, Briarcliff Manor, N.Y.
Minshew, Diane G., Rome, Ga.
Minton, Nita, Riverside, Calif.
Miracle, Janet H., Olathe, Kans.
Miranda, Joseph H., Vancouver, B.C., Canada
Mirus, Edward, Delavan, Wis.
Miske, Richard W., Faribault, Minn.
Mitchell, Betty L., Morganton, N.C.
Mitchell, Carolyn A., Centre, Ala.
Mitchell, DeRita A., Baton Rouge, La.
Mitchell, Dianne N., Rochester, N.Y.
Mitchell, Dorothy B., Morganton, N.C.
Mitchell, Morris S., Centre, Ala.
Mitchell, Peggy H., Austin, Tex.
Mitchell, Sue H., Silver Spring, Md.
Mitchell, Ted, Gaylord, Mich.
Mnich, Wayne, Talladega, Ala.
Mobley, Glenda, Trenton, N.J.
Mobley, Robert, Trenton, N.J.
Moen, Karen, Sioux Falls, S. Dak.
Moening, Christine, Lima, Ohio
Moffitt, Mary, Portland, Oreg.
Moffitt, Norma, Roy, Utah
Moffitt, Ruby L., Morganton, N.C.
Molacavage, Mary C., Tucson, Ariz.
Moline, Grace, Downers Grove, Ill.
Mollo, Marianne, Binghamton, N.Y.
Molloy, John F., Jr., Bloomfield Hills, Mich.
Monaghan, Bilbo, Knoxville, Tenn.
Moncreif, Clara, Talladega, Ala.
Monforton, Janice, Vancouver, Wash.
Monk, George, Lansing, Mich.
Monroe, Ann S., Winston-Salem, N.C.
Monsees, Edna K., Washington, D.C.
Montgomery, Brenda, Houston, Tex.
Montgomery, Callie, Rome, Ga.
Montgomery, Jeanie, Danville, Ky.
Montgomery, Vicki W., Lenexa, Kans.
Moon, Mary A., Indianapolis, Ind.
Mooneyham, Jeannine C., Covina, Calif.
Moore, Annette, Atlanta, Ga.
Moore, Elaine S., Pittsburgh, Pa.
Moore, Larry W., Jacksonville, Ill.
Moore, Leander, Knoxville, Tenn.
Moore, Jean P., Beaver Heights, Md.
Moore, Lucy, Jacksonville, Ill.
Moore, Marguerite, Colton, Calif.
Moore, Marian B., Tallahassee, Fla.
Moore, Marjorie, Fort Worth, Tex.
Moore, Sister Mary J., Pittsburgh, Pa.
Moore, Michael R., Jacksonville, Ill.
Moore, Sister Theresa, Buffalo, N.Y.
Moores, Donald F., St. Paul, Minn.
Mooring, Dorothy P., Harpers Ferry, W. Va.
Morehead, Libby, Park Forest, Ill.
Morgan, Martha K., Richardson, Tex.
Morgan, Susan, Roy, Utah
Morgenstein, Toby, Rochester, N.Y.
Morhaim, Jeannette E., Los Angeles, Calif.
Morita, Haruo, Vancouver, Wash.
Morris, Frederick K., Rome, N.Y.

Morris, Joan P., Pensacola, Fla.
Morris, Mildred, Spartanburg, S.C.
Morrison, Alice, Buffalo, N.Y.
Morrison, Kathy, Burbank, Calif.
Morrissette, Dona J., Las Vegas, Nev.
Morrow, Robert H., Spartanburg, S.C.
Morse, Katherine M., Tampa, Fla.
Morse, Susan G., San Angelo, Tex.
Morton, Pauline J., South Bend, Ind.
Mosher, Nancy, Holt, Mich.
Mosier, Wilbur, Hot Springs, Ark.
Moss, Janet L., Jacksonville, Ill.
Moss, Pamela G., Lancaster, Pa.
Mossel, Max, Fulton, Mo.
Mothersell, Lawrence, Geneseo, N.Y.
Motley, Gene R., St. Augustine, Fla.
Motley, Jeanne R., Denver, Colo.
Motley, Ruth G., St. Augustine, Fla.
Motley, Susan H., Fulton, Mo.
Mowl, Harold M., Jr., Pittsburgh, Pa.
Moylan, Carol A., Overland Park, Kans.
Mrizek, Shirley M., Citrus Heights, Calif.
Mucciolo, Lillian, Hastings-on-Hudson, N.Y.
Much, James B., Port Republic, N.J.
Mudgett, David E., Jacksonville, Ill.
Mudgett, Grace L., Jacksonville, Ill.
Muegge, Jane A., Austin, Tex.
Mueller, Ruth, Paola, Kans.
Mull, Betty S., Morganton, N.C.
Mull, Mabel, Drexel, N.C.
Mullane, Mary, Rockford, Ill.
Mullenax, Marlan R., Olathe, Kans.
Muller, Keith D., New York, N.Y.
Munro, Diane M., Indianapolis, Ind.
Murphy, Billie, Little Rock, Ark.
Murphy, Fred, Olathe, Kans.
Murphy, Harry J., Thousand Oaks, Calif.
Murphy, Joyce E., Vancouver, Wash.
Murphy, Joyce L., Sulphur, Okla.
Murphy, Rev. Lawrence C., Milwaukee, Wis.
Murphy, Lee C., Buffalo, N.Y.
Murphy, Rosemary, Bronx, N.Y.
Murray, John, Rice Lake, Wis.
Murray, John R., North Kingstown, R.I.
Murray, Tana, Honolulu, Hawaii
Murrell, Sylvia, Urbana, Ill.
Muse, Helen, Cave Spring, Ga.
Musmanno, Madelina, Riverside, Calif.
Myers, Willa E., Gooding, Idaho
Myhre, Doris, Milwaukee, Wis.
Myklebust, Joseph, Council Bluffs, Iowa
Myklebust, Pearl, Council Bluffs, Iowa

N

Nace, Dr. John G., Wilmington, Del.
Nagel, Robert F., New Haven, Conn.
Nagy, Edward J., Cave Spring, Ga.
Naiman, Doris W., New York, N.Y.
Nakano, Prof. Yoshitatsu, Hiroshima, Japan
Napolitan, Marie I., Battle Creek, Mich.
Nascimento, Daniel, Washington, D.C.
Nash, Kenneth R., Rochester, N.Y.
Nathanson, Yale S., Philadelphia, Pa.
Naud, Jean-Guy, Rochester, N.Y.
Navarro, Milagrosa L., Frederick, Md.
Naylor, Marion, Springfield, Mass.
Neal, Ermine, Cave Spring, Ga.
Neal, Margaret E., Altadena, Calif.
Neasham, Patricia A., Colorado Springs, Colo.
Needham, Richard M., Lancaster, Ohio
Neely, Delbert, Council Bluffs, Iowa
Neesam, Ralph F., Berkeley, Calif.
Neff, Linda, Los Angeles, Calif.
Neff, Tisa, Durango, Colo.
Neleigh, Janice, Pittsburgh, Pa.
Nelson, Arlene, Jacksonville, Ill.
Nelson, Catherine E., Baton Rouge, La.
Nelson, Glenn, Sioux Falls, S. Dak.
Nelson, Martin R., White Plains, N.Y.
Nelson, Patricia, Gooding, Idaho
Nelson, Ruth, Monmouth, Oreg.
Nespoli, Carol A., Paramus, N.J.
Neubacher, Marjorie, Drayton Plains, Mich.
Neumann, Donald, Tucson, Ariz.
Newbrough, Betty, Berkeley, Calif.
Newby, Mr. J. L., Cedar Rapids, Iowa
Newkirk, June E., Northridge, Calif.
Newman, Betty, Riverside, Calif.
Newman, Lawrence R., Riverside, Calif.
Neyhus, Arthur, Evanston, Ill.
Nicholson, Evelyn, Knoxville, Tenn.
Nicolai, Richard, Indianapolis, Ind.
Niedzialek, Edward J., Rochester, N.Y.
Nielson, J. Boyd, Ogden, Utah
Nies, Barbara A., New York, N.Y.
Nixon, Anne A., Stanford, Ky.
Nolan, Kevin J., Frederick, Md.
Nolan, Sam, Richmond, Calif.
Noland, Susan E., Austin, Tex.
Nomeland, Ronald E., Liverpool, N.Y.
Nordmann, Susan, Portland, Maine
Nordstrom, Vereen, Chicago, Ill.
Norris, Arthur G., Silver Spring, Md.
Norris, Nathan P., Washington, D.C.
North, Sister Rose A., Buffalo, N.Y.
Northrup, Nancy, St. Augustine, Fla.
Norton, Kenneth, Concord, Calif.
Nortz, Naomi, Vancouver, Wash.
Norwood, Charles W., Sulphur, Okla.
Norwood, Joyce M., Norfolk, Va.
Norwood, Malcolm J., New Carrollton, Md.
Noteboom, Frances, Sioux Falls, S. Dak.
Novick, Leonard, Brooklyn, N.Y.
Nowell, Richard C., Rochester, N.Y.
Noyce, Steven W., Salt Lake City, Utah
Nugent, Marilyn, Washington, D.C.
Nunnery, Joseph, Jackson, Miss.
Nutt, Emogene, Little Rock, Ark.
Nutt, Houston, Little Rock, Ark.
Nutt, Julia, Grand Prairie, Tex.
Nutter, Marilyn M., Rochester, N.Y.

Nye, William, Cumberland Center, Maine

O

Oatis, Patrick R., Indianapolis, Ind.
O'Brien, Elizabeth, Scottsville, N.Y.
O'Brien, Henry J., New York, N.Y.
O'Brien, John G., Bellevue, Wash.
O'Brien, Father Michael C., Tacoma, Wash.
O'Brien, Msgr. Michael D., Oakland, Calif.
Obrizzo, Mario, Avon, Conn.
Ochs, Regina M. B., Ventura, Calif.
O'Connor, Diane, Washington, D.C.
O'Connor, M. Lorraine, Saskatoon, Sask., Canada
O'Connor, Patricia, Pittsburgh, Pa.
O'Connor, Therese, Woodside, N.Y.
O'Donnell, Sister Jacqueline, Buffalo, N.Y.
Odzer, Olivia, Scranton, Pa.
Oetting, Elesa C., Las Vegas, Nev.
Ogan, Edith, Sulphur, Okla.
Ogden, Sister Angeline, Chicago, Ill.
Ogletree, Barbara L., Morganton, N.C.
O'Grady, Rosemary, White Plains, N.Y.
Ohlinger, Betty P., Colton, Calif.
Ohly, Miss Lee A., Delavan, Wis.
Ohta, Ymeyo A., Honolulu, Hawaii
Oja, Marica, St. Augustine, Fla.
Oja, Norman L., St. Augustine, Fla.
Okizaki, Cheryl L., Lakewood, Colo.
Olander, Mary, Gooding, Idaho
Olanoff, Pearl B., Philadelphia, Pa.
Olanoff, Rose S., Philadelphia, Pa.
Oliver, John H., Elkton, Fla.
Olmstead, Mary A., Austin, Tex.
Olsen, Corrine M., DeKalb, Ill.
Olsen, Gary W., Indianapolis, Ind.
Olsen, James B., Devils Lake, N. Dak.
Olsen, Jean, Flint, Mich.
Olson, Diane J., Riverside, Calif.
Olson, Harvey, Omaha, Nebr.
Olson, Jack R., Bozeman, Mont.
Olson, John, Indianapolis, Ind.
Olson, LeAnn, Omaha, Nebr.
Olson, Lucile N., Delavan, Wis.
Olson, Margaret J., Cheverly, Md.
Olson, Marlow J., Indianapolis, Ind.
Olson, Mary G., Columbus, Ohio
Olson, Raymond C., Sioux Falls, S. Dak.
O'Malley, Ann R., Danville, Ky.
O'Neill, Florence, Rome, N.Y.
O'Neill, Marlyn A., Urbana, Ill.
O'Neill, Maura, New York, N.Y.
Onken, Patricia, Jacksonville, Ill.
Opp, Louise A., Jamestown, N. Dak.
Opsahl, Harriet, Riverside, Calif.
Oquisanti, Joseph L., Glastonbury, Conn.
O'Regan, Marie, Portland, Maine
O'Reilly, Alicia, Houston, Tex.
Orlando, Sandra A., Williamsville, N.Y.
Orman, Doris B., Jacksonville, Ill.
O'Rourke, Betty H., Rockville, Md.
O'Rourke, Frances F., Buffalo, N.Y.
O'Rourke, Terrence J., Silver Spring, Md.
Orr, Agnes, Ogden, Utah
Orr, Mary L., El Paso, Tex.
Ortiz, Cordelia, Los Angeles, Calif.
Ortiz, Guadalupita, Santa Fe, N. Mex.
Orwasher, Rose, New York, N.Y.
Osborn, Dorisanne, Pittsburgh, Pa.
Osborn, Lucille B., Cleveland, Ohio
Osborne, Howard, Council Bluffs, Iowa
Osborne, Margaret, Council Bluffs, Iowa
Osburn, Nona L., Wayzata, Minn.
Osgood, Joan, Fountain City, Ind.
Osler, Charles, Little Rock, Ark.
Oslund, Irene B., Vancouver, Wash.
Oster, Mary N., Longmeadow, Mass.
Osterer, Carole, Sommerville, Mass.
Oswald, Mrs. Bobby S., Orange, Calif.
Otazo, Dr. Margaret, Athens, Ga.
Ottinger, Paula J., Frederick, Md.
Otto, Marion, Muncie, Ind.
Overholser, Charles R., Brattleboro, Vt.
Overlander, Caroline, Rochester, N.Y.
Overmyer, Margaret, Steubenville, Ohio
Owens, Charles R., Wilson, N.C.
Owens, Florine W., Riverside, Calif.
Owens, Joy B., Wilson, N.C.
Owens, Michael E., Landover, Md.
Owens, Nancy E., Massillon, Ohio
Owens, Vera Y., Cedartown, Ga.

P

Paarlberg, Betsy V., Normal, Ill.
Pace, Josephine, Hartford, Conn.
Pace, Ronald H., Wilson, N.C.
Pacheco, Dorothy, Greenfield, N.H.
Pack, Judy D., Pauline, S.C.
Padden, Agnes, Washington, D.C.
Padden, Donald, Washington, D.C.
Padden, Robert D., Olathe, Kans.
Paddock, Douglas, Briarcliff Manor, N.Y.
Paetz, Ann M., Rutherford College, N.C.
Page, Helen A., New York, N.Y.
Paine, Susan S., Tacoma, Wash.
Painter, Aubrey, Staunton, Va.
Painter, Carroll C., Spartanburg, S.C.
Painter, Claire S., Oakland, Calif.
Painter, Leon, Spartanburg, S.C.
Pakula, Isaac J., West Covina, Calif.
Palmer, Carl M., Henrietta, N.Y.
Palmquist, Warren, Simi Valley, Calif.
Panara, Robert F., Henrietta,, N.Y.
Panara, Shirley, Henrietta, N.Y.
Pancake, Anne E., Romney, W. Va.
Pancake, Virginia L., Romney, W. Va.
Panella, Andrea, Staunton, Va.
Panella, Tony, Staunton, Va.
Papalia, Anthony F., Vancouver, Wash.
Park, Patricia, Northridge, Calif.
Parker, Ann E., Locust Valley, N.Y.

Parker, Carlene, Portland, Maine
Parker, Dianne A., Olney, Md.
Parker, Dovie, Sulphur, Okla.
Parker, Mary, Owosso, Mich.
Parker, Pauline, Amherst, Nova Scotia, Canada
Parker, Samuel, Walkersville, Md.
Parkerson, Ellen, Staten Island, N.Y.
Parkin, Orpha, Carmel, Ind.
Parks, Fern, Olathe, Kans.
Parks, Lloyd R., Olathe, Kans.
Parks, Roy G., Little Rock, Ark.
Parks, Mrs. Roy T., Little Rock, Ark.
Parrish, Horace, Cedartown, Ga.
Pascoretta, Sister Marie, Pittsburgh, Pa.
Passo, Sylvia, Indianapolis, Ind.
Patek, Linda L., Houston, Tex.
Patrie, Stanley, Amherst, Mass.
Patterson, Dorothy, Olathe, Kans.
Patterson, Lola W., Hampton, Va.
Patterson, Ramelle F., Louisville, Ky.
Pattie, Helen T., Danville, Ky.
Patton, Charles Jr., Venice, Calif.
Patton, Mary C., Morganton, N.C.
Paul, James, Cheswick, Pa.
Paul, Jeanne, Riverside, Calif.
Paulli, John H., Riverside, Calif.
Payne, Marsha A., Middletown, Md.
Payne, Mary, Powder Springs, Ga.
Payne, Nancy, Salt Lake City, Utah
Payne, Polly G., Waltham, Mass.
Payne, Shirley, Fulton, Mo.
Paynter, Mary, Milwaukee, Wis.
Paxson, Grace E., Riverside, Calif.
Peacock, Leonard, Delavan, Wis.
Peak, Joseph J., Eureka, Ga.
Pearce, Virginia, Wilson, N.C.
Pearson, Constance M., Rochester, N.Y.
Pearson, Edward A., Hampton, Va.
Pearson, Ervin G., Morganton, N.C.
Pearson, John, Great Falls, Mont.
Peck, Bill J., Salem, Oreg.
Pedigo, James, Jacksonville, Ill.
Pellicci, Luzio, White Plains, N.Y.
Peltier, Carol A., Danville, Ky.
Peltier, Edward F., Danville, Ky.
Penny, Penelope, Cave Spring, Ga.
Pepe, Joseph, Riverside, Calif.
Perdue, Catherine, Cave Spring, Ga.
Perdue, Eugene, Cave Spring, Ga.
Perkins, Deborah A., Carmichael, Calif.
Perkins, Roger S., Knoxville, Tenn.
Perlmutter, Miles B., Los Angeles, Calif.
Perotti, Nancy, Colorado Springs, Colo.
Perry, Kristen O., Indianapolis, Ind.
Perry, Robert, Little Rock, Ark.
Peterman, Susan, Kent, Ohio
Peters, Bryanne, Wilson, N.C.
Peters, Carol C., Austin, Tex.
Peters, Charles, Salt Lake City, Utah
Peters, Maxine G., Rochester, N.Y.
Peters, Vernice, Riverside, Calif.
Petersen, Eugene W., Indianapolis, Ind.
Petersen, Frances D., Hockessin, Del.
Petersen, Larry, Mt. Lake Terrace, Wash.
Peterson, Barbara, Rome, N.Y.
Peterson, Barbara A., Riverside, Calif.
Peterson, Barbara B., Rock Island, Ill.
Peterson, Betty, San Diego, Calif.
Peterson, David R., Northridge, Calif.
Peterson, Gerald A., Orange, Calif.
Peterson, Linda, Rockford, Ill.
Peterson, Paul C., Rochester, N.Y.
Peterson, Rosamond, Webster, N.Y.
Peterson, Shirley, Hagerman, Idaho
Peterson, Susan, Wadena, N. Mex.
Petrone, Angela, Winnipeg, Manitoba, Canada
Petrone, Elma M., Audubon, Pa.
Pettingill, Don G., Seabrook, Md.
Petty, Diana, Austin, Tex.
Petty, Phyllis T., Spartanburg, S.C.
Pezel, Bonnie, San Mateo, Calif.
Pfardresher, Nancy C., Houston, Tex.
Pflaster, Gail, New York, N.Y.
Pflaum, Michael E., Encinitas, Calif.
Pfnister, Naomi L., Salem, Oreg.
Pharr, Gladys M., Austin, Tex.
Phelps, Arthur D., Frederick, Md.
Phelps, Lenore P., Baltimore, Md.
Phillips, Ben S., Baton Rouge, La.
Phillips, Eleanor C., China Lake, Calif.
Phillips, Frances I., Upper Montclair, N.J.
Phillips, Matthew, Baton Rouge, La.
Phillips, Michael, Prairie Grove, Ark.
Phillips, Sister Priscilla, Burbank, Calif.
Phillips, Richard M., Washington, D.C.
Piccolino, Joseph R., Glenmont, N.Y.
Picou, Kateri A., Riverside, Calif.
Pidcock, Barry D., Jacksonville, Ill.
Pierce, Carlene W., Newark, N.J.
Pierce, Cheryl, Council Bluffs, Iowa
Pierson, Kay H., Baltimore, Md.
Pieslak, Mary M., Trenton, N.J.
Pike, Patricia S., Lincoln, Ala.
Pilsums, Leonids, Staunton, Va.
Pino, Jacob F., Fresno, Calif.
Piper, Pam, St. Louis, Mo.
Piper, Raymond, Austin, Tex.
Pirruccella, Rosalie A., Lincoln, Nebr.
Plaster, Marguerite C., Morganton, N.C.
Platt, Donna-Lee, Deux-Montagnes, Quebec, Canada
Plausky, Sister Jean, Randolph, Mass.
Plemmons, Edward, Morganton, N.C.
Plummer, Donald M., Winnipeg, Manitoba, Canada
Plummer, Richard L., Perris, Calif.
Poland, Eileen, Aurora, Ill.
Polasky, Wendy, Saginaw, Mich.
Pollard, Gerald, Oakland, Calif.
Polley, Janet S., Scranton, Pa.
Pollock, Cristine A., Atlanta, Ga.
Pongan, Ruth C., Levittown, Pa.
Poole, Norma C., Faribault, Minn.
Pope, Barry L., Wilson, N.C.

Pope, Eugene, St. Augustine, Fla.
Porter, Dean, Olathe, Kans.
Porter, Gerald G., Silver Creek, N.Y.
Porter, Shirley, Ogden, Utah
Porter, Susan, Little Rock, Ark.
Porter, Thomas A., Olathe, Kans.
Porter, Van C., Ballentine, S.C.
Posey, Annie R., Spartanburg, S.C.
Posey, Edward E., Del Valle, Tex.
Postma, Karen L., Los Angeles, Calif.
Potter, Carla, Sulphur, Okla.
Potwin, Gail, Millbrae, Calif.
Powell, Frank W., Dallas Tex.
Powers, Ann, Bayville, N.Y.
Powers, Gerald W., Bloomburg, Pa.
Powers, Wilann S., Lindale, Ga.
Prall, Josephine, Spartanburg, S.C.
Preece, Susan M., Dallas, Tex.
Presher, Mildred, Little Rock, Ark.
Pressnell, Lucille M., Atlanta, Ga.
Prestien, Jean, Dallas, Tex.
Preston, Katharine S., Atlanta, Ga.
Price, Albert W., Baton Rouge, La.
Price, Bill, Sulphur, Okla.
Price, F. K., Indianapolis, Ind.
Price, Lynn H., Frederick, Md.
Price, Joan G., Boulder, Colo.
Prickett, Bill, Pittsburgh, Pa.
Prickett, Hugh, Athens, Ga.
Priddy, Dorothy M., Houston, Tex.
Prielipp, Darlene K., Sterling Heights, Mich.
Prince, Jean, Oakland, Calif.
Prince, Robert J., Concord, Calif.
Privitera, Paula, Rochester, N.Y.
Prochnau, Shirley J., Phoenix, Ariz.
Procter, Dorsey E., Covina, Calif.
Prokes, Jerry E., St. Augustine, Fla.
Prokes, Linda, St. Augustine, Fla.
Pronovost, Wilbert, Boston, Mass.
Propp, George, Glenview, Ill.
Provance, Ben, Washington, D.C.
Pruden, Catherine W., Trenton, N.J.
Pruitt, Ann L., West Lafayette, Ind.
Ptaszek, Joan, Naperville, Ill.
Puckett, Kathryn A., Silver Spring, Md.
Puglisi, Joyce, Brooklyn, N.Y.
Pullen, Vera, Chicago, Ill.
Pullum, Patricia, Indianapolis, Ind.
Purdy, Burton, F., Dartmouth, N.S., Canada
Puryear, Alice M., Austin, Tex.
Puthoff, Larry R., Sioux Falls, S.D.
Putnam, Lee, Washington, D.C.
Pyle, David, Sulphur, Okla.
Pyle, Donna, Sulphur, Okla.

Q

Quarles, Camelia H., Atlanta, Ga.
Quarles, Grace E., Clinton, Miss.
Querio, Eileen, Riverside, Calif.
Quick, Carol, Toledo, Ohio
Quick, Marian, University Park, Pa.
Quigley, Dr. Howard M., Washington, D.C.
Quigley, Lorraine, Salt Lake City, Utah
Quill, Eleanor R., Hartsdale, N.Y.
Quill, Lenora, Champaign, Ill.
Quincannon, Margaret, Portland, Maine
Quinlivan, Rev. Thomas, Batavia, N.Y.
Quinn, Kathleen S., Ypsilanti, Mich.
Quinn, LeVere S., Riverside, Calif.
Quinn, Marian, Chicago, Ill.
Quinsland, Peggy, Lake Geneva, Wis.
Quintana, Henrietta, Santa Fe, N. Mex.
Quintana, Linda B., Santa Fe, N. Mex.

R

Raasch, Kristine, Milwaukee, Wis.
Rabinowitz, Irvin, Atlanta, Ga.
Rabinowitz, Laura M., New Britain, Conn.
Radford, Jeanette, Creve Coeur, Mo.
Radvany, Charles A., Trenton, N.J.
Ragner, Floyd, Portland, Oreg.
Raguseo, JoAnn, Norwalk, Conn.
Rahmel, Betty, Mundelein, Ill.
Rahmlow, Howard H., Riverside, Calif.
Raichle, Margaret E., Seattle, Wash.
Raine, Lucy H., Danville, Ky.
Raines, Beverly, Sepulveda, Calif.
Rainier, James R., Sulphur, Okla.
Rainier, Linda L., Sulphur, Okla.
Rakyta, Paul, Torrington, Conn.
Ramborger, William J., Spartanburg, S.C.
Ramsey, Genevieve, Omaha, Nebr.
Ranard, Helene, West Hartford, Conn.
Randall, Clemotine Y., Tucson, Ariz.
Randall, Corinne, Vancouver, Wash.
Randall, Mrs. Darrel, Austin, Tex.
Randall, Diana, Austin Tex.
Randall, Elizabeth F., Knoxville, Tenn.
Randall, James, Vancouver, Wash.
Randall, Kenneth, St. Augustine, Fla.
Randel, Gail, San Mateo, Calif.
Raneses, Agapita, Salt Lake City, Utah
Rank, Arvilla, Milwaukee, Wis.
Ransdell, W. E., Gurnee, Ill.
Ransom, Glenyce, Covina, Calif.
Rapp, Nancy, Jacksonville, Ala.
Rarus, Nancy B., Simsbury, Conn.
Rasbornick, Sandra C., Kensington, Md.
Rasor, Gabrielle, Dallas, Tex.
Rathe, Sharon K., Rock Valley, Iowa
Rathbun, Cathy B., Salem, Oreg.
Rattazzi, Donato Jr., Bolton, Conn.
Rattray, Phyllis, Brooks, Oreg.
Ravn, Alden C., Jacksonville, Ill.
Ravn, Caroline T., Jacksonville, Ill.
Ray, Alyric, Kaysville, Utah
Ray, Eliza J., Wilson, N.C.
Ray, J. Hubert, Talladega, Ala.
Ray, Max M., Baton Rouge, La.
Raybould, Marilyn, Tucson, Ariz.

Raymon, Florence, New York, N.Y.
Raymond, Linda, West Covina, Calif.
Ready, Cleve, Fulton, Mo.
Reay, Edward W., Gooding, Idaho
Rebok, Helen H., Elmwood, Conn.
Records, Lynn, Orange, Calif.
Recotta, Patricia E., Rochester, N.Y.
Reddell, Rayford C., San Francisco, Calif.
Redding, Dorothy M. St. Augustine, Fla.
Redwine, Emily H., Atlanta, Ga.
Reece, Norma, Delavan, Wis.
Reece, Yolanda, Baltimore, Md.
Reed, Barbara, Gooding, Idaho
Reed, Harold A., Gooding, Idaho
Reed, Hilma, Little Rock, Ark.
Reed, Lolee, Colorado Springs, Colo.
Reed, Lois M., Rochester, N.Y.
Reed, Marthada, Fulton, Mo.
Reed, Richard D., Fulton, Mo.
Reeder, Andrea C., Pasadena, Calif.
Reelfs, Brenda, Council Bluffs, Iowa
Rees, Alberta M., Trenton, N.J.
Rees, Heidi Lee, Madison, Va.
Reese, Janice T., Clarks Summit, Pa.
Reese, Robert L., Waco, Tex.
Reeve, Mark, Grosse Point, Mich.
Reeves, Harriett, Spartanburg, S.C.
Reeves, Louis, Winnipeg, Man., Canada
Rehder, Mary E., Whitestone, N.Y.
Rehrig, Caroline D., Philadelphia, Pa.
Reid, B. Sue, Wichita Falls, Tex.
Reid, Jane M., Seattle, Wash.
Reich, Erica, Evanston, Ill.
Reidelberger, Eleanor, St. Augustine, Fla.
Reidelberger, Henry J., St. Augustine, Fla.
Reilly, Ann, Dallas, Tex.
Reimer, Becky L., Denver, Colo.
Reinke, Patricia A., Philadelphia, Pa.
Reinsvold, Jane M., Yorba Linda, Calif.
Reitz, Edward Jr., Omaha, Nebr.
Reitz, Patty, Omaha, Nebr.
Rembe, Raymond R., Cockeysville, Md.
Rembert, Willa R., Columbia, S.C.
Renck, Gene B., Fullerton, Calif.
Renna, Edith V., New York, N.Y.
Rensberger, Nina, Indianapolis, Ind.
Repass, Jan, Portland. Maine
Resnick, Libby, Brooklyn, N.Y.
Reuck, Blanche M., Jacksonville, Ill.
Reyburn, Marian, Bethany, Okla.
Reynolds, Betty E., Roebuck, S.C.
Reynolds, Lula A., Louisville, Ky.
Rezen, Susan V., New York, N.Y.
Rhoades, Ellen, Atlanta, Ga.
Rhoades, Sidney, Colorado Springs, Colo.
Rhodes, Margaret F., Augusta, Ga.
Rhoten, Donald E., St. Augustine, Fla.
Rice, Dorothy W., St. Augustine, Fla.
Rice, Ferne, Salem, Oreg.
Rice, Geraldine T., Omaha, Nebr.
Rice, Pat, Faribault, Minn.
Rice, Sabra, Fulton, Mo.
Richards, Ann M., Raleigh, N.C.
Richards, Leslie, Omaha, Nebr.
Richards, Veronica G., Newington, Conn.
Richardson, Gertrude A., Jackson, Miss.
Richardson, Mont W., Northridge, Calif.
Richardson, Ruth, Vancouver, Wash.
Richey, Hilda, Delavan, Wis.
Rieger, Clifford, Philadelphia, Pa.
Riekehof, Lottie L., Falls Church, Va.
Riggs, Barbara L., Upper Marlboro, Md.
Rightmyer, Ann G., Danville, Ky.
Rigor, Nancy L., Concord, Calif.
Rinaldi, Anna Marie, Salem, Oreg.
Ring, Isabel, Bronx, N.Y.
Ringer, Sister Miriam T., Randolph, Mass.
Rinquist, Beth, Orchard Park, N.Y.
Ripley, Peter H., Morganton, N.C.
Riser, Catherine, Talladega, Ala.
Rislov, Kenneth, DeKalb, Ill.
Risser, Linda M., Landover, Md.
Ritchie, Katheryn, Dobbs Ferry, N.Y.
Ritter, Dwight, Scituate, Mass.
Ritter, Susan H., Emporia, Kans.
Roach, Robert E., Birmingham, Ala.
Roach, Sherry L., Ypsilanti, Mich.
Roake, Shermalee H., Salem, Oreg.
Robb, Marilyn J., Beaverdale, Pa.
Roberts, Cherie, LaSalle, Quebec, Canada
Roberts, Earl, Santa Fe, N. Mex.
Roberts, John, Rome, N.Y.
Roberts, Linda, Baton Rouge, La.
Roberts, Mary A., Baton Rouge, La.
Roberts, Carl P., Northridge, Calif.
Roberts, Robert J., Tarrytown, N.Y.
Robertson, George, Fulton, Mo.
Robertson, Mary A., Hollis, N.Y.
Robertson, Pearl, Winnipeg, Man., Canada
Robillard, John A., Takoma Park, Md.
Robins, Diana, Hazlet, N.J.
Robins, Kathleen, Salt Lake City, Utah
Robinson, Carol, West Hartford, Conn.
Robinson, Janet R. Mc., Tecumseh, Mich.
Robinson, Karen H., Ogden, Utah
Robinson, Marie, Jackson, Miss.
Robinson, Norris L., Rochester, N.Y.
Robinson, Ralph I., Colorado Springs, Colo.
Robortaccio, Babara, Bayville, N.Y.
Roche, Elenora A., Chicago, Ill.
Rockwell, Dale L., Rush, N.Y.
Rockwell, Sybil, Milwaukee, Wis.
Rodgers, Alice W., Cedartown, Ga.
Rodgers, Patrice A., Shafter, Calif.
Rodin, Bonnie S., Chicago, Ill.
Rodning, Rebecca, Portland, Oreg.
Rodriguez, Sylvia T., Gretna, La.

Roe, Susan, Little Rock, Ark.
Roebuck, Aaron A., Clinton, Miss.
Roeder, Sister Annette, Brooklyn, N.Y.
Roesch, Irvin H., Moscow, Idaho
Rogan, Dinah M., Danville, Ky.
Rogers, Barbara E., Jacksonville, Ill.
Rogers, Edward V., Rochester, N.Y.
Rogers, Melany R., Dallas, Tex.
Roggero, Michael R., Tucson, Ariz.
Rogowski, Mary E., Ypsilanti, Mich.
Rohm, Gretchen C., Newark, Del.
Rollins, Joan, Tampa, Fla.
Roloff, Richard, Rochester, N.Y.
Roney, Marywinn, Spartanburg, S.C.
Rood, Marvin S., Romney, W. Va.
Roper, Jennie M., Morganton, N.C.
Rose, J. Martin, Amherst, N.S., Canada
Rose, Susan, Rochester, N.Y.
Roseberry, Anne K., Portland, Maine
Rosen, Irvin, Middlebrook, Va.
Rosen, Laurie E., Honolulu, Hawaii
Rosen, Willabell B., Middlebrook, Va.
Rosenbaum, Michael, East Meadow, N.Y.
Rosenberg, Paul M., Naperville, Ill.
Rosenberg, Sandy K., Conshohocken, Pa.
Rosenblatt, Bonnie, Silver Spring, Md.
Rosenbloom, Betty, Washington, D.C.
Rosica, Sebastian, Clarence, N.Y.
Ross, Carol B., Maryville, Tenn.
Ross, Mark, Longmeadow, Mass.
Ross, Mary, Olathe, Kans.
Roth, John, Sioux Falls, S. Dak.
Roth, Penelope A., Roanoke, Va.
Roth, Stanley D., Olathe, Kans.
Rothman, Gail, Rochester, N.Y.
Rothschild, Jeff B., Bronx, N.Y.
Rothstein, Suzanne, Rochester, N.Y.
Rounds, Rev. H. L. Peter, Riverside, Calif.
Rouquie, Lewis, Spartanburg, S.C.
Routzong, Marilyn A., Forest Hill, Md.
Roussos, Katherine K., Vancouver, Wash.
Rowan, Mary A., Avondale Estates, Ga.
Rowe, Linda J., Burbank, Calif.
Rowland, Carolyn, Garden Grove, Calif.
Rowles, Joan K., Hyattsville, Md.
Roy, Howard, Washington, D.C.
Royall, H. G., Jr., Raleigh, N.C.
Royster, Margaret, Danville, Ky.
Rubano, Patricia, Wheatridge, Colo.
Rubenstein, Adrea, Houston, Tex.
Rubin, Sara D., New York, N.Y.
Rucker, Thomas H., Rochester, N.Y.
Ruder, Anita, West Hartford, Conn.
Rudy, J. Paul, Newark, Del.
Rudy, Les, Riverside, Calif.
Rugg, Phyllis, Washington, D.C.
Rumford, Susan A., Yarmouth, Maine
Rukavina, Kathryn, Pittsburgh, Pa.
Rundlett, Judith, Santa Susana, Calif.
Runyan, Linda K., Sulphur, Okla.
Runzo, David, Rochester, N.Y.
Ruple, Jo F., St. Augustine, Fla.
Rupert, Stanford W., VacaVille, Calif.
Ruschival, Mary S., St. Augustine, Fla.
Rush, Anna H., Riverside, Calif.
Russ, Karen, New York, N.Y.
Russell, Dennis, St. Augustine, Fla.
Russell, Eula, Peoria, Ill.
Russell, Martha L., Ellicott City, Md.
Russell, Myrlen J., St. Augustine, Fla.
Rustman, Barbara, Deerfield, Wis.
Ryan, Don M., Denton, Tex.
Rybak, John P., Williamsville, N.Y.
Rynearson, Rev. Rodney R., Rochester, N.Y.
Ryterske, Donna, Fort Leonard Wood, Mo.

S

Saabye, Betty I., Salem, Oreg.
Sacco, Beverly, East Rochester, N.Y.
Sachs, Marvin C., Rochester, N.Y.
Sadowski, Jane, Rochester, Wis.
St. Esther, Sister, Philadelphia, Pa.
St. John, Andrew, St. Augustine, Fla.
St. Marie, Michelle, Portland, Oreg.
Sakamoto, Susan, Berkeley, Calif.
Salerno, Sandra, Elmhurst, N.Y.
Sales, Marjorie D., Ada, Okla.
Sallop, Marvin B., West Hartford, Conn.
Salomon, Leslie, Warren, Mich.
Saitelli, Donna V., Gaithersburg, Md.
Salter, Marilyn B., Champaign, Ill.
Saltzman, Judy, Randallstown, Md.
Salvato, Carmine Daniel, Burbank, Calif.
Samelian, Gloria A., St. Cloud, Minn.
Samlos, Dorothea, Joliet, Ill.
Sams, Wilbert, Baton Rouge, La.
Samuel, Nancy T., San Juan, P.R.
Sanchez, Aurelio E., Santa Fe, N. Mex.
Sanders, Mrs. Lee C., Knoxville, Tenn.
Sanders, Patricia, Anchorage, Alaska
Sandifer, Julie, Baton Rouge, La.
Sanford, Judith A., Kew Gardens, N.Y.
Sansone, John J., Jr., Greeley, Colo.
Sapko, Ada M., Pittsburgh, Pa.
Sargent, Paula M., Jacksonville, Ill.
Sargis, Rena, Prospect Heights, Ill.
Sarlin, Bruce M., New York, N.Y.
Sartain, John, Talladega, Ala.
Sasser, Elizabeth M., Morganton, N.C.
Saulnier, Karen, Washington, D.C.
Sauger, Nan, Knoxville, Tenn.
Saunders, Erva M., Washington, D.C.
Sawhill, Bill, Seattle, Wash.
Saxe, Beulah, Delavan, Wis.
Saxon, Mildred, Rochester, N.Y.
Say, Ann, Marietta, Ga.
Saywell, Martha, Baltimore, Md.
Sbarsky, Shirley, Rosedale, N.Y.
Scalf, Charlotte A., Knoxville, Tenn.
Scardilli, Sherry B., Camden, N.J.
Scattaretico, Mary T., Yonkers, N.Y.
Schaberl, Edward J., Massillon, Ohio
Schaer, Nancy, Brooklyn, N.Y.

Schaff, Patricia, Sterling Heights, Mich.
Schanzenbach, Nancy R., Greensburg, Pa.
Scharff, Gary, Evans, Colo.
Schartner, James, Rockville, Md.
Schartner, Virginia, Rockville, Md.
Schatz, Virginia, Pittsburgh, Pa.
Schaufeld, Judith, Hewlett, N.Y.
Scheffy, Patricia, Baton Rouge, La.
Schein, Jerome D., New York, N.Y.
Schell, Martha, Jacksonville, Ill.
Scheppach, Van K., Colorado Springs, Colo.
Scherer, Patricia, Northbrook, Ill.
Scheringer, Antonia, St. Paul, Minn.
Schielke, Alfred E., Trenton, N.J.
Schiller, Eileen, Mineola, N.Y.
Schindler, Virginia N., Glendora, Calif.
Schirmer, Barbara R., Mansfield, Mass.
Schlein, Fran C., Fort Worth, Tex.
Schmidt, Burton S., Riverside, Calif.
Schmidt, Joanna L., Ypsilanti, Mich.
Schmidt, John, West Jordan, Utah
Schmitt, Helen, Louisville, Ky.
Schmitt, John, Louisville, Ky.
Schmitt, Margaret A., Sheboygan, Wis.
Schmitt, Philip J., Washington, D.C.
Schmitz, Brenda, Mission, Kans.
Schmitz, J. W., Tacoma, Wash.
Schoemehl, Mary, Lansing, Mich.
Schoenherr, Lurline, St. Clair Shores, Mich.
Scholtz, Virginia C., Danville, Ky.
Schoolcraft, Mary H., Gooding, Idaho
Schoppert, Thelma L., Frederick, Md.
Schorsch, Stephen W., Darien, Ill.
Schowe, Ben W., Cheverly, Md.
Schrader, Patrick J., Indianapolis, Ind.
Schroeder, Elizabeth, Tucson, Ariz.
Schroeder, Meredith M., Salem, Oreg.
Schuch, Brenda J., San Angelo, Tex.
Schuchman, John S., Washington, D.C.
Schulberg, Helen, New York, N.Y.
Schultz, Ervin, Faribault, Minn.
Schultz, Jean S., Washington, D.C.
Schultz, M. Gretchen, Valdosta, Ga.
Schultz, Stephen R., Henrietta, N.Y.
Schulze, Robert, Council Bluffs, Iowa
Schuman, Connie, Riverside, Calif.
Schunhoff, Hugo F., Berkeley, Calif.
Schurman, Reta M., Collingwood, Nova Scotia, Canada
Schutte, Nancy C., Hastings-On-Hudson, N.Y.
Schwab, Warren A., Framingham, Mass.
Schwadron, Deborah, Brooklyn, N.Y.
Schwake, William O., Sulphur, Okla.
Schwartz, Jonie, Riverside, Calif.
Schwartz, Sharon M., Skokie, Ill.
Schwartzman, Solomon, Verona, Pa.
Schwarz, Doris, Kensington, Md.
Schwebach, Rhinella D., Eau Claire, Wis.
Schween, Dorothy D., Dallas, Tex.
Sciarretta, Janice B., Lexington, Mass.
Sciortino, Joanne, Brooklyn, N.Y.
Scofield, Harry, Webster, N.Y.
Scott, Edith D., Atlanta, Ga.
Scott, Edward W., Jacksonville, Ill.
Scott, Elizabeth, Washington, D.C.
Scott, Elsie B., Baltimore, Md.
Scott, Evelyn J., Princeton, N.J.
Scott, Fannye, Rome, Ga.
Scott, Juanita H., Newport News, Va.
Scott, Martha, Oakland, Calif.
Scott, Melissa, Dallas, Tex.
Scott, Saundra L., Lawrence, Kans.
Scott, Susan C., Morganton, N.C.
Scouten, Edward L., Fairport, N.Y.
Scouten, Eleanor, Fairport, N.Y.
Scowcroft, Mrs. Lou A., Farmington, Mich.
Scozzari, Salvatore, White Plains, N.Y.
Scribner, Robert, Delavan, Wis.
Scroggs, Carolyn L., Seattle, Wash.
Scully, Mary J., Riverside, Calif.
Seaborn, Marlene W., Mount Pleasant, S.C.
Seale, Jerri, Little Rock, Ark.
Seals, Rosie B., Jackson, Miss.
Seaman, Virginia, White Plains, N.Y.
Searles, Sandy A., Las Vegas, Nev.
Seaver, Linda, Poplar Grove, Ill.
Seeger, Julius P., Austin, Tex.
Seeger, Lawrence, Wilson, N.C.
Seeger, Ruth M., Austin, Tex.
Segreti, Helen, Portland, Oreg.
Seiders, Nancy, Sioux Falls, S.D.
Seiler, Peter, Bolingbrook, Ill.
Sellers, Linda L., Garland, Tex.
Sellner, Hubert J., El Cerrito, Calif.
Semmes, Marilyn B., Bethesda, Md.
Serafin, Stanley, Yakima, Wash.
Sessler, Charles, Indianapolis, Ind.
Setzer, Jimmie P., Drexel, N.C.
Severance, Dorothy, Gooding, Idaho
Sevigny, Pierre J., Romney, W. Va.
Sevilla, Ofelia M., Newark, Del.
Sewell, Helen R., Austin, Tex.
Seymour, Miriam T., Seattle, Wash.
Shaddix, Callie H., Talladega, Ala.
Shadoin, Laura, Aston, Pa.
Shaffer, Deborah, Longmont, Colo.
Shaffer, Myra M., Butler, Pa.
Shaffer, Thomas R., Langhorne, Pa.
Shahan, Pauline J., Washington, D.C.
Shalizi, Tahmina, Portland, Oreg.
Shane, Timothy M., Morganton, N.C.
Shanholtzer, Elfrieda P., Romney, W. Va.
Shannon, Nora, Rochester, N.Y.
Sharp. Elaine, Wausau, Wis.
Sharpe, Marguerite C., Frederick, Md.
Shaver, Mildred, Wilmington, Del.
Shaw, Roberta F., St. Augustine, Fla.
Shearer, Howard W. II, Olathe, Kans.
Sheehan, Edna R., Wynnewood, Pa.
Sheehan, Elizabeth A., Atlanta, Ga.
Sheehy, Patti, Greeley, Colo.
Sheeley, Eugene C., University, Ala.

Sheffield, Etta R. T., Macon, Ga.
Shellam, George W., Romney, W. Va.
Shellgrain, Evelyn M., Oakland, Calif.
Shenault, Alexandria, Jackson, Miss.
Shenault, John W., Jackson, Miss.
Shepard, Charlotte H., Salem, Oreg.
Shepard, Elgiva, Morganton, N.C.
Shepard, Marcy, Hartford, Conn.
Sheppard, Katherine, Omaha, Nebr.
Sher, Joanna, St. Paul, Minn.
Sherey, Brenda, Skokie, Ill.
Sheridan, Donald, Vancouver, Wash.
Sheridan, Maureen P., Dearborn, Mich.
Sherizen, Joan D., Chicago, Ill.
Sherrill, Wilson W., Morganton, N.C.
Sherry, Francilla, Pennsauken, N.J.
Shetler, Katherine B., St. Augustine, Fla.
Shevlin, Cheryl, Staunton, Va.
Shinpaugh, Joe, Staunton, Va.
Shipley, Carolyn, Rome, Ga.
Shipman, Eldon E. Romney, W. Va.
Shipman, John S., Staunton, Va.
Shippey, Janis, Little Rock, Ark.
Shock, Ruth A., Muncie, Ind.
Shopshire, Jay, Staunton, Va.
Short, Dorothy, Spartanburg, S.C.
Shotwell, Clayton M., Colorado Springs, Colo.
Shouse, Steven A., Indianapolis, Ind.
Shouse, William R., Jacksonville, Ill.
Shrum, Susan D., Pocatello, Idaho
Shull, A. Jean, Gig Harbor, Wash.
Shults, Judith K., Knoxville, Tenn.
Shults, Susan W., Indianapolis, Ind.
Shumate, Sally, Morganton, N.C.
Shuster, Esther M., Pittsburgh, Pa.
Shutsky, Fay, Washington, D.C.
Sibiliski, Claudia, Milwaukee, Wis.
Siders, Jerry, Omaha, Nebr.
Siders, Judith, Ralston, Nebr.
Siegel, Barbara, Evanston, Ill.
Sielaff, Esther E., Dowling, Mich.
Sierra, Benigno, El Rosario, Yauco, Puerto Rico
Siger, Leonard, Baltimore, Md.
Silberman, Fran, Laguna Beach, Calif.
Silberstein, Joel M., Spartanburg, S.C.
Silk, Duncan B., Colorado Springs, Colo.
Silva, John J., West Hartford, Conn.
Silver, Rawley A., Rye, N.Y.
Silverman, S. Richard, St. Louis, Mo.
Simeon, Sister Rose C., Pittsburgh, Pa.
Simmons, Al, Little Rock, Ark.
Simmons, Emily, Dallas, Tex.
Simmons, M. Patricia, Los Angeles, Calif.
Simmons, Maureen, Buffalo, N.Y.
Simmons, Sandra L., Wilson, N.C.
Simon, Shannon C., St. Augustine, Fla.
Simonalle, Virginia M., Honolulu, Hawai
Simons, Ida, Rochester, N.Y.
Simonson, Carl, Winnipeg, Manitoba, Canada
Simpson, Eileen M., Morganton, N.C.
Simpson, William M., Morganton, N.C.
Sims, Raye S., Talladega, Ala.
Sinclair, Deborah L., Phoenix, Ariz.
Sinclair, J. Wayne, Walkersville, Md.
Sinclair, John B., Belmont, Mass.
Sinclair, Margaret P., Salem, Oreg.
Sine, Joy L., Seattle, Wash.
Singer, Carolyn Sue, Henrietta, N.Y.
Singer, Karen, New York, N.Y.
Singleton, Julian, Salem, Oreg.
Sins, Valerie A., Pittsburgh, Pa.
Sio, Phyllis, Rockford, Ill.
Siscel, James T., Glendale, Ariz.
Sisco, Frankie J., St. Augustine, Fla.
Sisneros, Joe W., Colorado Springs, Colo.
Sisti, Katherine A., Bayville, N.Y.
Sitar, Magdalene W., Romney, W. Va.
Skalka, Evelyn C., Washington, D.C.
Skatvold, Mrs. Sammie K., San Marino, Calif.
Skiles, Michael M., Baton Rouge, La.
Skinner, Lillian H., Northridge, Calif.
Skinner, Nancy, Greeley, Colo.
Slack, Ellen, Portland, Oreg.
Slade, Elwin B., Tucson, Ariz.
Sladek, Frank E., Tucson, Ariz.
Slan, Linda C., Potomac, Md.
Slater, Eppie, Vancouver, Wash.
Slater, Michael F., St. Augustine, Fla.
Slater, Rita L., St. Augustine, Fla.
Sleep, Ann, Santa Fe, N. Mex.
Slemenda, Joan A., Pittsburgh, Pa.
Slemenda, John C., Pittsburgh, Pa.
Slemp, Laura O., Eugene, Oreg.
Slinko, Ora, Hartford, Conn.
Sloboda, William P., Silver Spring, Md.
Slosar, Richard J., Northridge, Calif.
Sluck, Patricia, Old Forge, Pa.
Sluppick, Juanita, Hyattsville, Md.
Slutzky, Stephanie L., Chicago, Ill.
Smallwood, Dorothy B., Riverside, Calif.
Smeltzer, Neita K., Hershey, Pa.
Smith, Alberta D., Seymour, Tenn.
Smith, Alice W., Morganton, N.C.
Smith, Bernard E., Pittsford, N.Y.
Smith, Betsy, Mill Neck, N.Y.
Smith, Beverly C., Trenton, N.J.
Smith, Carol, West Hartford, Conn.
Smith, Carol A., Pontiac, Mich.
Smith, Carolyn B., St. Augustine, Fla.
Smith, Carroll, Riverside, Calif.
Smith, Catherine, Brooklyn, N.Y.
Smith, Charlotte, Dallas, Tex.
Smith, Cherie W., Pittsburgh, Pa.
Smith, Diana F., Fort Huachuca, Ariz.
Smith, Dorothy L., St. Augustine, Fla.
Smith, Elizabeth A., Sulphur, Okla.
Smith, Ellen M., Tacoma, Wash.
Smith, Helen L., Las Vegas, Nev.
Smith, Jess, Indianapolis, Ind.
Smith, Jewell, Sulphur, Okla.
Smith, Joena, Jacksonville, Ill.
Smith, Mrs. Johnnie F., Gages Lake, Ill.

Smith, Jonlyn H., Seattle, Wash.
Smith, Judie M., Oklahoma City, Okla.
Smith, Katherine A., Atlanta, Ga.
Smith, Kathie D., Sunnyvale, Calif.
Smith, Laura E., Morganton, N.C.
Smith, Louise S., Baton Rouge, La.
Smith, Lucrece B., Wilson, N.C.
Smith, Margaret K., Palos Heights, Ill.
Smith, Marjorie F., Portland, Oreg.
Smith, Mary L., Troy, Mich.
Smith, Mary W., Baton Rouge, La.
Smith, Mavis D., Sulphur, Okla.
Smith, Brother Michael, Brooklyn, N.Y.
Smith, Nancye, Milwaukee, Wis.
Smith, Nonnie S., Dallas, Tex.
Smith, Patsy R., Knoxville, Tenn.
Smith, R. Elaine, Decatur, Ill.
Smith, Roland O., Upland, Calif.
Smith, Sara M., Indianapolis, Ind.
Smith, Sheri W., Atlanta, Ga.
Smith, Stanley, Concord, Calif.
Smith, Susan, Goshen, Ind.
Smith, Terry A., Salt Lake City, Utah
Smith, Valerie, Lake Charles, La.
Smits, Ausma, Lanham, Md.
Smolinski, Lucille, Naperville, Ill.
Smrz, Richard F., Romney, W. Va.
Snead, Laura K., Gastonia, N.C.
Snell, Joy, San Gabriel, Calif.
Snell, Mary M., Austin, Tex.
Snoke, Roberta F., Columbus, Ohio
Snyder, David M., Romney, W. Va.
Snyder, Jean, Aptos, Calif.
Snyder, Judith A., Greenville, S.C.
Snyder, Margaret G., Flint, Mich.
Soderlind, Lydia, Honolulu, Hawaii
Soderlund, Madeleine, LaGrange Park, Ill.
Soehner, Michael, Hamburg, N.Y.
Solano, Sister Frances, Brooklyn, N.Y.
Solko, Sandra S., Lenexa, Kans.
Solliday, Sally S., Jacksonville, Ill.
Solomon, Judith, Mamaroneck, N.Y.
Somers, Wanda C., Virginia Beach, Va.
Sommer, Clarence, Faribault, Minn.
Sommer, Elizabeth H., Faribault, Minn.
Somppi, Ada, Great Falls, Mont.
Sonderman, Marion, Colorado Springs, Colo.
Sonnenstrahl, Deborah M., Silver Spring, Md.
Sopko, Dell, Austin, Tex.
Sopko, Melissa, Tempe, Ariz.
Sorensen, Brenda, Alhambra, Calif.
Sorensen, Gabriela B., Phoenix, Ariz.
Sorenson, Lewell, Arcadia, Calif.
Soto, Martha L., Tucson, Ariz.
Sowell, Luda B., Riverside, Calif.
Sowers, Charley K., Hickory, N.C.
Sparks, Bob, Danville, Ky.
Sparks, Fred L., West Hartford, Conn.
Sparks, Hazelene C., West Hartford, Conn.
Speed, Waneta, Salem, Oreg.
Speegle, James, Webster, N.Y.
Speicher, JoAnn, Mayfield, Pa.
Spellman, John F., Cranston, R.I.
Spence, Howard B., Soringhill, Nova Scotia, Canada
Spencer, Carlieze W., Warner Robins, Ga.
Spencer, Donald G., Windsor, Conn.
Spencer, Martha, Columbus, Ohio
Spencer, Rita A., Frederick, Md.
Sperr, Louise, Long Beach, Calif.
Superstad, Bert, Dearborn, Mich.
Spidal, David A., Woodbridge, Va.
Spiller, Jo Carole, Baton Rouge, La.
Spinks, Mary A., San Antonio, Tex.
Spinks, Vickie L., Augusta, W. Va.
Spizzirri, Julius C., Torrance, Calif.
Spotts, Jane E., Jeromesville, Ohio
Sprecher, Sherrill G., New Britain, Conn.
Springer, Stephen, Toronto, Ontario, Canada
Sprotte, Barbara W., Olathe, Kans.
Squire, Melvin, Indianapolis, Ind.
Srednicki, Joan C., Morganton, N.C.
Stack, Albert, Olathe, Kans.
Stack, Archie G., Vancouver, Wash.
Stack, Hugh L., Austin, Tex.
Stack, Marianne, Vancouver, Wash.
Stack, Sister Patricia M., Pittsburgh, Pa.
Staddon, Janet, Indianapolis, Ind.
Staehle, Jack M., White Plains, N.Y.
Stagliano, Michael A., Rome, N.Y.
Stambaugh, Eileen P., Frederick, Md.
Stamps, Anna, Morganton, N.C.
Stamps, Harlteen, Morganton, N.C.
Standley, C. Joseph, Jacksonville, Ill.
Stanek, Elaine B., Romney, W. Va.
Stanfield, Kathleen, New Berlin, Ill.
Stanfill, Dorothy C., Indianapolis, Ind.
Stanfill, Lester, Indianapolis, Ind.
Stangarone, James E., Rochester, N.Y.
Stanley, Irene E., Pittsburgh, Pa.
Stansberry, David A., Buffalo, N.Y.
Stanton, Ruth, Vancouver, Wash.
Stanulis, Gloria, Wilkes-Barre, Pa
Starmer, Gwen J., Olathe, Kans.
Starrett, Anne B., Morganton, N.C.
Stashkevetch, Barbara S., Princeton, N.J.
States, Roberta J., Pittsburgh, Pa.
Stay, Martha, Flint, Mich.
Stayer, Leslie, Staunton, Va.
Stearns, Dorothy H., Laurel, Md.
Stecker, Etta, Costa Mesa, Calif.
Steele, Alvin E. Jr., Cave Springs, Ga.
Steele, Debbi, Redlands, Calif.
Steele, Janie N., Cave Spring, Ga.
Steely, Patricia A., Salem, Oreg.
Steffen, Richard, Waldorf, Md.
Steffey, Mary, Staunton, Va.
Steigerwald, Ileene P., Riverside, Calif.
Stein, Shirley, Washington, D.C.
Steinberger, Carol A., Battle Creek, Mich.

Steinbrecher, Mrs. R., Los Angeles, Calif.
Stelle, Roy M., White Plains, N.Y.
Stephan, Joan H., Minneapolis, Minn.
Stephens, Joann B., Normal, Ill.
Stephens, S. S., Amarillo, Tex.
Stephenson, Carl, Riverside, Calif.
Stepp, Geverna, Rome, Ga.
Stergios, Leonides, Elmhurst, N.Y.
Stern, Corinne, Nashville, Tenn.
Stern, Robert C., St. Augustine, Fla.
Stern, Sharon, Phoenix, Ariz.
Stern, Virginia W., Westport, Conn.
Steven, Flora H., Buffalo, N.Y.
Stevens, Barbara M., Washington, D.C.
Stevens, Jean M., Lompoc, Calif.
Stevens, Linda, Little Rock, Ark.
Stevens, Margaret, Lawndale, Calif.
Stevens, Raymond P., Battleboro, Vt.
Stevens, Ruth, Rochester, N.Y.
Stevens, William, Washington, D.C.
Stevenson, Virginia L., Tucson, Ariz.
Stevenson, Vivian M., East Lansing, Mich.
Stewart, Eugene, Treynor, Iowa
Stewart, Gerald W., St. Augustine, Fla.
Stewart, Jane, Pittsburgh, Pa.
Stewart, John, Gorham, Maine
Stewart, Robert C., Pittsburgh, Pa.
Stine, Blanche, Fulton, Mo.
Stinson, Wm. Harvey, Sulphur, Okla.
Stoefen, Jill M., Lincoln, Nebr.
Stockglausner, Jo-Ann, Atlanta, Ga.
Stokely, Francis B., Spartanburg, S.C.
Stoker, Richard, Tuscaloosa, Ala.
Stokesbary, Glen, Vancouver, Wash.
Stokesbary, Jean, Vancouver, Wash.
Stoller, Iris, Miami, Fla.
Stoltenberg, Doran, Vancouver, Wash.
Stone, Pauline M., Jackson, Miss.
Stoppler, Jurley, Everett, Wash.
Storey, Marilyn, Dallas, Tex.
Stotts, Joseph, Vancouver, Wash.
Stout, Gail, Indianapolis, Ind.
Stovall, Annie, Little Rock, Ark.
Straszewski, Lorraine, Shorewood, Wis.
Strauss, Marcia K., Colorado Springs, Colo.
Stream, Richard W., Galveston, Tex.
Stricker, Berte, Philadelphia, Pa.
Strieby, Edward, Delavan, Wis.
Striggow, Charlene, West Des Moines, Iowa
Stringfield, Maude W., Little Rock, Ark.
Strizver, Nancy, Laurel, Md.
Strobel, Sharon, Russellville, Mo.
Strohmeier, Sara J., Trenton, N.J.
Strong, Ernest C., Bakersfield, Calif.
Stroud, Edith D., Atlanta, Ga.
Stroud, George H., St. Augustine, Fla.
Stroud, Thelma, Ada, Okla.
Strow, Amy, Dallas, Tex.
Stuckless, Ross E., Fairport, N.Y.
Stump, Geraldine C., Romney, W. Va.
Sturgeon, Ronald, Vancouver, Wash.
Stutz, Barbara L., Austin, Tex.
Styrlund, Myrtle, Covina, Calif.
Subtelny, Joanne D., Rochester, N.Y.
Sucharski, Paul, Delavan, Wis.
Sullivan, Sister Declan, Randolph, Mass.
Sullivan, Elizabeth G., Austin, Tex.
Sullivan, Estelle, West Falmouth, Maine
Sullivan, Gerald L., Riverside, Calif.
Sullivan, Timothy L., Dallas, Tex.
Sulsen, Mrs. Ralph C., Jackson, Miss.
Summa, Margaret A., Portchester, N.Y.
Summers, Alan K., Yardley, Pa.
Summers, Edward, Baton Rouge, La.
Sundaresan, Savithri, Modesto, Calif.
Super, Vinita B., Phoenix, Ariz.
Supplee, Allie, Clarksville, Ind.
Sussman, Allen E., Washington, D.C.
Suter, Elizabeth A., Hartford, Conn.
Suttlemyre, C. Gary, Ogden, Utah
Sutter, Elaine, Vancouver, Wash.
Sutton, Lee B., Knoxville, Tenn.
Sutton, Lottie V., Wilson, N.C.
Suveges, Penny J., Newport Beach, Calif.
Svaldi, Dennis J., Littleton, Colo.
Svetlik, Mary O., Schaumburg, Ill.
Swaiko, Nancy, Westminster, Md.
Swaim, Anna L., Concord, Calif.
Swaim, William D., Concord, Calif.
Swart, Mimi L., Riverside, Calif.
Swartz, Mary J., Indianapolis, Ind.
Swartzendruber, Mary L., Rochester, N.Y.
Sweeney, Mary Lou, Rome, N.Y.
Sweet, Myrle J., Richmond, Calif.
Swift, Carol, Pittsburgh, Pa.
Swigart, Frances B., Milwaukee, Wis.
Swinney, Lonna L., Dallas, Tex.
Sydnor, Jacqueline, Hampton, Va.
Sykes, Rachel C., White Hall, Ill.
Syra, Sister M., Chicago, Ill.
Szemplenski, Joyce, Council Bluffs, Iowa
Szuba, Jennie M., Lackawanna, N.Y.
Szymanski, Mary, Grand Island, N.Y.

T

Taft, Brenda, Flint, Mich.
Taggart, Mary A., Chicago, Ill.
Takahashi, Leona, Los Angeles, Calif.
Takemori, Wendy, Sulphur, Okla.
Takeshira, Carolyn, Denver, Colo.
Talbot, Elaine, Bellevue, Wash.
Talcove, Arlene, Pittsfield, Mass.
Tallent, Ruth, Cave Spring, Ga.
Tallet, Sharon H., Abilene, Tex.
Tarins, Jack, North White Plains, N.Y.
Tarkington, Doyce, Little Rock, Ark.
Tart, Virginia W., St. Augustine, Fla.
Tarter, Gwendolyn B., Baltimore, Md.
Tasker, Vivian, Normal, Ill.
Tassin, Marie, Spartanburg, S.C.
Tate, Olen, Talladega, Ala.

Tate, Rachael, Jackson, Miss.
Tavender, Charles S., St. Augustine, Fla.
Taylor, Doris H., Washington, D.C.
Taylor, Evelyn, Knoxville, Tenn.
Taylor, Frances, Morganton, N.C.
Taylor, Jane R., Morganton, N.C.
Taylor, Jerry, Ogden, Utah
Taylor, John E., Salem, Oreg.
Taylor, Leonard, Fulton, Mo.
Taylor, Rebekah L., Wilson,, N.C.
Taylor, Robert, North Salem, N.Y.
Taylor, Velda L., Danville, Ky.
Tedford, JoAnne B., Winston Salem. N.C.
Teets, Beverly P., Salem, Oreg.
Teets, Royal S., Salem, Oreg.
Tegeder, Robert, Ogden, Utah
Televiak, Pat, University Heights, Ohio
Telford, Helen, Goshen, Ind.
Tellam, Joan, Tucson, Ariz.
Tellam, William, Tucson, Ariz.
Templin, Carol, Jacksonville, Ill.
Tennis, C. Ann, Berkeley, Calif.
Tennis, Donaldina, Riverside, Calif.
Terk, Rachel, Dallas, Tex.
Terry, Linda K., Atlanta, Ga.
Terry, Rachel, Cave Spring, Ga.
Terry, Wayne S., St. Augustine, Fla.
Tesauro, Patricia A., Denver, Colo.
Testut, E. W., Chickasha, Okla.
Tetlow, Josephine A., Pittsburgh, Pa.
Tetreault, Edward L., Anaheim, Calif.
Teuber, Hartmut, Dover. N.H.
Teubner, Ronald, Colorado Springs, Colo.
Thaler, Rev. Earl J., Pittsfield, Maine
Thames, Georgianna F., University, Ala.
Thatcher, Isabelle, Ogden, Utah
Theel, Charles, Talladega, Ala.
Thetford, Mamie M., Pearce, Ariz.
Thiel, Jerilyn J., Lenexa, Kans.
Thiel, Linda L., Middletown, Conn.
Thixton, Katherine, Indianapolis, Ind.
Thomas, Annie, Jackson, Miss.
Thomas, Charles A., Danville, Ky.
Thomas, Grace D., Salem, Oreg.
Thomas, Helen P., Fresno, Calif.
Thomas, Johnnie, Sulphur, Okla.
Thomas, Judy, Rochester, N.Y.
Thomas, Robert E., Anchorage, Alaska
Thomas, Rose R., Spartanburg, S.C.
Thomas, Ruby, Council Bluffs, Iowa
Thomas, Sarah L., Jackson, Mich.
Thompson, Annette S., Romney, W. Va.
Thompson, Bridget A., Baton Rouge, La.
Thompson, Mrs. Corley, St. Louis, Mo.
Thompson, George H., Omaha, Nebr.
Thompson, Janet E., San Diego, Calif.
Thompson, Lowell A., Phoenix, Ariz.
Thompson, Marie S., Pittsburgh, Pa
Thompson, Martha F. E., Danville, Ky.
Thompson, Mary A., Oakland, Calif.
Thompson, Ray H., Provo, Utah
Thomson, Robert J., St. Augustine, Fla.
Thomson, Ruth A., Trenton, N.J.
Thomure, F. Eugene, College Park, Md.
Thoreson, Margaret, Vancouver, Wash.
Thornton, Elizabeth, Colorado Springs, Colo.
Thornton, Pamela A., Odessa, Tex.
Thornton, William, Riverside, Calif.
Thurber, Albert K., North Ogden, Utah
Tiano, Michele A., Berkeley, Calif.
Tibayan, Letitia F., Newark, Del.
Tibble, T. M. (Mr.), Springfield, Ill.
Tiberio, Carmen S., St. Augustine, Fla.
Tiberio, Eloise B., St. Augustine, Fla.
Tidrick, Getha C., Selah, Wash.
Tidwell, Genoa E., Sulphur, Okla.
Tiff, Mary S., Shawnee Mission, Kans.
Tiffany, John, St. Augustine, Fla.
Tiffany, Linda L., Buena Park, Calif.
Tillinghast, Edward W., Tucson, Ariz.
Timen, Marian, Pittsburgh, Pa.
Timney, Irene, Tucson, Ariz.
Tims, Martha A., Lenexa, Kans.
Tinsman, Mary L., Battle Ground, Wash.
Tinsmith, Ernest, Bronx, N.Y.
Tipton, Katherine, Knoxville, Tenn.
Tisdale, Hope, Austin, Tex.
Titsworth, Elizabeth, Trenton, N.J.
Titus, James, Council Bluffs, Iowa
Titus, James R., Pittsburgh, Pa.
Tobin, Dennis, Fresh Meadows, N.Y.
Todd, John A., Los Angeles, Calif.
Tollefson, Olaf, Salem, Oreg.
Tompkins, Lillian M., West Hartford, Conn.
Toms, Julia H., Chattanooga, Tenn.
Toner, Helen A., San Bernardino, Calif.
Toney, Betty, Rochester, N.Y.
Toohney, Jerome F. Jr., Baltimore, Md.
Toole, Paul N., Salem, Oreg.
Topel, Lauren, Morton Grove, Ill.
Topping, Dorothy K., St. Louis, Mo.
Torr, Donald V., Washington, D.C.
Tower, Janet, Indianapolis, Ind.
Townsley, Louis, Washington, D.C.
Trabman, Bernice, Detroit, Mich.
Trachtenberg, Christiansted, St. Croix, V.I.
Tracy, Dolores M., Stanford, Conn.
Tracy, Sandra D., Jacksonville, Ill.
Train, Alice, Concord, N.H.
Trainor, Ruth F., Fayetteville, N.Y.
Traylor, Robert W., Council Bluffs, Iowa
Trboyevich, Goldie, Washington, D.C.
Treidel, Sonia F., Little Rock, Ark.
Tremaine, Harry A. Jr., Huntington Beach, Calif.
Trevarthen, Marjorie, Vancouver, Wash.
Trice, Cynthia, Overland Park, Kans.

Triebert, Raymond F., West Hartford, Conn.
Triguero, Kennth H., San Diego, Calif.
Troiano, Ellen C., Pittsburgh, Pa.
Trott, Joan V., Edmonton, Alberta, Canada
Trubov, Phyllis S., Columbus, Ohio
Trujillo, Lydio T., Buffalo, N.Y.
Trukken, Elaine, Faribault, Minn.
Tubb, Lonnie L. Sr., Benton, Ariz.
Tucci, Mark A., Trenton, N.J.
Tuccinardi, Norma, Vancouver, Wash.
Tuccinardi, Richard, Vancouver, Wash.
Tuckee, Edward J. Jr., Blauvelt, N.Y.
Tucker, Jack, Sulphur, Okla.
Tucker, James L. Jr., Silver Spring, Md.
Tuininga, Phyllis, Omaha, Nebr.
Tullios Olouse, Jackson, Miss.
Tully, Norma L., Washington, D.C.
Tuma, Richard W. Sr., Willingboro, N.J.
Tunanidas, Irene, Youngstown, Ohio
Turechek, Armin C., Colorado Springs, Colo.
Turechek, Elsie B., Colorado Springs, Colo.
Turk, Bernice G., Lanham, Md.
Turk, Hosea, Birmingham, Ala.
Turke, Nora M., Jacksonville, Ill.
Turley, Bruce E., Wilson, N.C.
Turnbull, Maxine A., Pinetop, Ariz.
Turner, Ann, Hempstead, N.Y.
Turner, Letisha A., Danville, Ky.
Turpin, Garry V., Moore, S.C.
Turrou, Lana L., Dugway, Utah
Tutt, Betty B., Fulton, Mo.
Tuttle, Bernice Q., Morganton, N.C.
Tuttle, Mary B., Morganton, N.C.
Tweedie, David, Arlington, Va.
Twidwell, Marjorie, Tulsa, Okla.
Twining, Ann, Muncie, Ind.
Twining, J. Dean, Muncie, Ind.
Tyberg, Thomas R. E., Riverdale, Md.
Tylak, Doreen W., Hartford, Conn.
Tyson, Theresa D., Baton Rouge, La.

U

Uhrig, Elaine, Greeley, Colo.
Ullrich, Elizabeth, Danville, Ky.
Ulmer, Georgia K., Salem, Oreg.
Ulmer, Thomas A., Salem, Oreg.
Underhill, Kathleen P., Morganton, N.C
Underhill, Wanda, Oakland, Calif.
Unger, Claire L., Berkeley, Calif.
Updegraff, David R., Potomac, Md.
Updike, Gary J., Spring Hill, Kans.
Uridil, Kathie, Omaha, Nebr.
Uyeda, Charles H., Portland, Oreg.

V

Val, Sarah E., New Carrollton, Md.
Valentine, Bruce C., Scranton, Pa.
Valentine, Michael, Greenbelt, Md.
Valine, Robert J., Independence, Oreg.
Van Bockern, Charlotte, Sioux Falls, S. Dak.
VanCott, Daniel, Pelham, N.Y.
Vanderslice, Ellen, Dallas, Tex.
Vanderveer, Colette, Peekskill, N.Y.
Vandevander, Constance, Dunbar, W. Va.
VanDrimmelen, Thomas, Ogden, Utah
van Houton, Bernadette, San Francisco, Calif.
Van Luven, Elizabeth A., Hyattsville, Md.
VanManen, Mary L., Austin, Tex.
van Pul, Margaret H., Delray Beach, Fla.
VanRoekel, Willis, Camas, Wash.
VanTighem, Betty, Great Falls, Mont.
Varkados, Despena, Vancouver, Wash.
Vasishta, Madan, Washington, D.C.
Vasnick, Andrew, Ardsley, N.Y.
Vassey, Rebecca, Spartanburg, S.C.
Vasys, Mary E., Bellevue, Nebr.
Vaughan, Edna M., Houston, Tex.
Vaughan, Verdry D., Hyattsville, Md.
Veit, Carol, Milwaukee, Wis.
Velarde, Terri, El Paso, Tex.
Ventura, Barbara L., Irwin, Pa.
Verdecanna, Rosemary, Bronx, N.Y.
Vernoski, Kathleen A., Rochester, N.Y.
Vessey, Karen, Omaha, Nebr.
Vexina, Isabelle, Portland, Maine
Vickstrom, Helen M., Auburn, Mass.
Vinci, Hazel M., Middletown, Conn.
Viñerola, Rose, Rio Piedras, P.R.
Viole, Carol M., Culver City, Calif.
Virginette, Sister M., Evergreen Park, Ill.
Virnig, Jo Ann, Omaha, Nebr.
Visner, Joan, New Milford, N.J.
Vitale, Sister Claude M., Brooklyn, N.Y.
Vlug, Henry, Vancouver, B.C., Canada
Voelkle, Terry, Irving, Tex.
Vold, Florence C., Rome, N.Y.
Vollmer, Lawrence, Little Rock, Ark.
Volpe, Marcia H., Seattle, Wash.
Von Tickner, James K., Richmond, Calif.
Vorek, Eileen E., West Mifflin, Pa.
Vorobey, Nancy, Fairfax, Va.
Vose, Edie, Lake Oswego, Oreg.

W

Wade, Sarah, Cave Spring, Ga.
Wagner, C. Richard III, Amarillo, Tex.
Wagner, William H., Canton, Ohio
Wagoner, Debra J., Black Mountain, N.C.
Wahl, Allois W., Jacksonville, Ill.
Wahl, Howard P., Jacksonville, Ill.
Wahl, Lewis B., St. Louis, Mo.
Wait, Mark A., Middletown, Md.
Wait, Mildred J., Middletown, Md.
Walborsky, Paula, Tallahassee, Fla.
Walcott, Sherry, Oklahoma City, Okla.

Waldman, Celia, Forest Hills, N.Y.
Waldorf, Jane, Dallas, Tex.
Waldron, Peggy L., Jacksonville, Ill.
Wales, Billie R., Riverside, Calif.
Waling, Sandra, Delavan, Wis.
Walker, Archibald W., Stanford, Ky.
Walker, Carolyn R., Hawkins, Tex.
Walker, Diane C., Morganton, N.C.
Walker, Eugenia R., Tuscaloosa, Ala.
Walker, Isabelle R., Stanford, Ky.
Walker, N. F., Spartanburg, S.C.
Wall, Kathy, Ardsley, Pa.
Wall, Pauline W., Danville, Ky.
Waller, Jacque L., Dallas, Tex.
Wallis, Ann, Austin, Tex.
Walman, Neil, Mt. Vernon, N.Y.
Walmaley, Constance, W. Los Angeles, Calif.
Walter, Gerald G., Fairport, N.Y.
Walter, Karen A., Brush, Colo.
Walters, D. Wayne, Baton Rouge, La.
Walters, Glenn C., Riverside, Calif.
Walters, Helen P., Santa Clara, Calif.
Walters, Holly M., Riverside, Calif.
Waltersdorf, Elna, Omaha, Nebr.
Walthall, Doris L., San Antonio, Tex.
Walton, Beverly, Arlington, Va.
Waltrip, Betty, Fulton, Mo.
Walworth, Margaret, Washington, D.C.
Wanat, Mary V., Williamsville, N.Y.
Warburton, Starla C., Sepulvada, Calif.
Warchol, Barbara A., Rochester, N.Y.
Ward, Helen R., Decatur, Ga.
Ward, Rosie, Jackson, Miss.
Ward, Virginia, Danville, Ky.
Warden, Sheridan S., Ann Arbor, Mich.
Ware, Margaret L., Winter Park, Fla.
Wareham, Betty A., Rochester, N.Y.
Warick, Dennis L., West Hartford, Conn.
Warner, D. W., Ogden, Utah
Warren, Betty, Jackson, Miss.
Warren, Carrie, Omaha, Nebr.
Warren, Judith, Plattsburgh, N.Y.
Warren, Repsie, Philadelphia, Pa.
Warshawsky, Celia, Skokie, Ill.
Wasell, Irene L., Inglewood, Calif.
Washburn, Arthur O., Adrian, Mich.
Waterman, Joan B., Jacksonville, Fla.
Waters, Patricia, Tustin, Calif.
Waters, Sharon, Tustin, Calif.
Watkins, Carla, Little Rock, Ark.
Watkins, Dorothy, Pittsburgh, Pa.
Watkins, Earl, Delavan, Wis.
Watson, Evelyn W., Morganton, N.C.
Watson, Howard W., Indianapolis, Ind.
Watson Inez L., St. Augustine, Fla.
Watson, Paulette S., Stafford, Va.
Watson, Robert C., Wilson, N.C.
Watts, Ed. J., Greeley, Colo.
Waugaman, Jane, Pittsburgh, Pa.
Waugh, Michael Z., Kansas City, Mo.
Waye, Constance K., Romney, W. Va.
Weadick, Bernice F., Denver, Colo.
Weakley, T. J., Indianapolis, Ind.
Wean, Dianne M., Knoxville, Tenn.
Weaver, Laura, Salt Lake City, Utah
Webster, Mary A., Dallas, Tex.
Wecht, Susan B., Oakland, Calif.
Weed, Margaret E., St. Augustine, Fla.
Weeks, Lucie E., Newark, Del.
Wehrli, Robert, Washington, D.C.
Weida, Jean W., Dallas, Tex.
Weidner, Eunice, Mill Neck, N.Y.
Weinberg, Audrey, Oyster Bay, N.Y.
Weinert, Eileen, Cinnaminson, N.J.
Weins, Carlton, Tucson, Ariz.
Weinstein, Basya, Brooklyn, N.Y.
Weir, Byrna, Rochester, N.Y.
Weir, Deborah, Lawndale, Calif.
Weir, Robert C., Lansing, Mich.
Weiss, Carol, Washington, D.C.
Weiss, Donald F., Fulton, Mo.
Welch, Beulah, Rome, Ga.
Welch, Charles W., Annandale, Va.
Welch, William G., Rome, Ga.
Weller, Rosemary, Washington, D.C.
Welling, Jean, North Ogden, Utah
Wellington, Rick, Colorado Springs, Colo.
Wells, Lois, Sulphur, Okla.
Wells, Loretta, Alhambra, Calif.
Wells, William H., Spartanburg, S.C.
Welsh, Kitty, Redondo Beach, Calif.
Welsh, Verna T., Miami, Fla.
Wendorff, Phyllis R., Beverly, Mass.
Werner, DaWayne L., Staunton, Va.
Wesley, Martha F., Rochester, N.Y.
Wesley, Z. L., West Hyattsville, Md.
Wesnofske, Matthias, Smithtown, N.Y.
West, Angeleen E., Austin, Tex.
West, David, Santa Fe, N. Mex.
West, Elizabeth M., Jacksonville, Ill.
West, Helen J., Arlington, Va.
West, Kay, Indianapolis, Ind.
West, Larry E., Frederick, Md.
Westfall, Judith, Staunton, Va.
Westmoreland, Donald R., Morganton, N.C.
Westphall, Norma R., Denver, Colo.
Whatley, Dorthice, Baton Rouge, La.
Wheeler, Elizabeth, Silver Spring, Md.
Wheeler, Leslie, Baton Rouge, La.
Whelan, Michael, Gladstone, Mich.
Whisman, Charley, Indianapolis, Ind.
Whitaker Frances, Raleigh, N.C.
White, Agnes B., Perryville, N.Y.
White, Alfred H., Frederck, Md.
White, Frances M., Austin, Tex.
White, Gail J., Lawndale, Calif.
White, Gloria W., Norwich, Conn.
White, Henry L., Elkton, Fla.
White, John, Raymond, Miss.
White, Maurice M., Vancouver, B.C., Canada
White, Robert J., Colorado Springs, Colo.
White, Viola W., Elkton, Fla.
White, Walter E., Gooding, Idaho
Whitehouse, Karla P., Danville, Ky.

Whitehouse, Mary S., Danville, Ky.
Whiteside, Sharon, Denver, Colo.
Whitley, Mary J. H., Ithaca, N.Y.
Whitmire, James, Roebuck, S.C.
Whitney, Kenneth J., Vancouver, Wash.
Whitson, Judy, Little Rock, Ark.
Whitt, Alonzo, Colorado Springs, Colo.
Whitworth, Jimmy H., Cave Springs, Ga.
Wichmann, Diane, Queens Village, N.Y.
Wick, Marshall E., Henrietta, N.Y.
Widhalm, Jane E., Dwight, Ill.
Widmer, Henry N., Jacksonville, Ill.
Wilbanks, James, Springfield, Va.
Wilbur, Elizabeth, West Bridgewater, Mass.
Wilden, Patricia A., Chicago, Ill.
Wilding, David G., Gooding, Idaho
Wilkerson, Henry L., Baton Rouge, La.
Wilkie, Josie T., Spindal, N.C.
Wilkinson, Donald, Santa Fe. N. Mex.
Wilkinson, Edna, Rochester, N.Y.
Wilkinson, Mattie L., Jackson, Miss.
Wilkinson, Myrlene, Vancouver, Wash.
Willard, Margaret S., Pittsburgh, Pa.
Willcoxon, Dorothy L., Austin, Tex.
Willemsma, Tena, Romney, W. Va.
Williams, Barbara, Austin, Tex.
Williams, Carl L., Morganton, N.C.
Williams Carolyn, Knoxville, Tenn.
Williams, Diane R., Solana Beach, Calif.
Williams, Donna M., Danville, Ky.
Williams, Elizabeth D., Romney, W. Va.
Williams, Elvira L., Omaha, Nebr.
Williams, Helen, Milwaukee, Wis.
Williams, Helen R., Fulton, Mo.
Williams, Jane C., Morganton, N.C.
Williams, John M., Austin, Tex.
Williams, Katharine, Talladega, Ala.
Williams, Kathryn J., Riverside, Calif.
Williams, Marilyn, Morganton, N.C.
Williams, Martha, Talladega, Ala.
Williams, Sharon A., Little Rock, Ark.
Williams, Sondra S., Pittsburgh, Pa.
Williams, Viki C., El Paso, Tex.
Williams, Wayne B., Knoxville, Tenn.
Williams, William H., Pittsford, N.Y.
Williamson, Elaine, Knoxville, Tenn.
Williamson, James B., Wilson, N.C.
Willie, Leslie K., Gooding, Idaho
Willis, Arthur B., Berkeley, Calif.
Willis, Patricia A., St. Augustine, Fla.
Wills, Robert C., Olathe, Kans.
Wilson, Charline, Knoxville, Tenn.
Wilson, Deborah A., North Versailles, Pa.
Wilson, Frances S., Staunton, Va.
Wilson, G. I., Salem, Oreg.
Wilson, Grace E., Rome, N.Y.
Wilson, James, Little Rock, Ark.
Wilson, Joan, Clinton, Ohio
Wilson, Joyce L., Walker, La.
Wilson, Kenneth L., Jacksonville, Ill.
Wilson, Laverne, San Antonio, Tex.
Wilson, Louise, Chicago, Ill.
Wilson, Margaret, Los Angeles, Calif.
Wilson, Margaret, Sulphur, Okla.
Wilson, Mary S., Austin, Tex.
Wilson, Melvia C., Houston, Tex.
Wilson, Natalie, Indianapolis, Ind.
Wilson, Rae, Lawrence, Ind.
Wilson, Ronald F., Morganton, N.C.
Wilson, Sue, Romulus, N.Y.
Wilson, Sylvia E., Monroeville, Pa.
Wiltse, Frances, Devils Lake, N. Dak.
Wiltse, Lyle A., Devils Lake, N. Dak.
Wingo, Annie C., Spartanburg, S.C.
Winalski, Gerard, Alexandria, Va.
Winsett, Ann, West Covina, Calif.
Winter, Phyllis, Chicago, Ill.
Winters, Ellen G., Berkeley, Calif.
Wiseman, Jille, Morganton, W. Va.
Wisner, Jane C., Jackson, Miss.
Wissman, Karen, Rochester, N.Y.
Witczak, Betty N., Riverside, Calif.
Withers, Sara, Washington, D.C.
Withrow, Margaret S., Reston, Va.
Withum, Kathryn A., Myrtle Beach, S.C.
Witmer, Ann, Hadison Heights, Mich.
Witte, Diane, Jacksonville, Ill.
Woebke, John E., Staunton, Va.
Wohlner, Lynne W., Chicago, Ill.
Wolach, Marvin, Santa Fe, N. Mex.
Wolf, Donna E., LeRoy, N.Y.
Wolf, Elsie M., Portland, Maine
Wolfe, Mary, St. Augustine, Fla.
Wolff, Louise, Ogden, Utah
Wolff, Sydney, Perry, N.Y.
Wonder, Guy, Vancouver, Wash.
Wong, Fran, Phoenix, Ariz.
Wood, David L., Falmouth Foreside, Maine
Wood, Gladys, Knoxville, Tenn.
Wood, Janice, Bellevue, Nebr.
Wood, Wilbur, Knoxville, Tenn.
Woodburn, Vicki, Lincoln, Nebr.
Woodby, Ronald D., Morganton, N.C.
Woodruff, Irvan L., Orinda, Calif.
Woodrum, Dorothy, Staunton, Va.
Woods, Brenda J., Jacksonville, Fla.
Woods, Lucie S., Romney, W. Va.
Woodward, Jean, Buffalo, N.Y.
Woolley, Shirley, Riverside, Calif.
Wooten, Erskine A., Cedartown, Ga.
Word, Muriel, Dallas, Tex.
Worden, Virginia E., Gainesville, Fla.
Wright, Avis L., Staunton, Va.
Wright, Beverly A., Portland, Maine
Wright, Elizabeth A., Bayville, N.Y.
Wright, Evelyn S., Jacksonville, Ill.
Wright, Hal W., Wilson, N.C.
Wright, Janice E., Pittsburgh, Pa.
Wright, Kieth C., Washington, D.C.
Wright, Lynda, Pittsburgh, Pa.
Wright, Martha B., Las Vegas, Nev.
Wright, Ruth A., Fulton, Mo.
Wright, Susan B., Bremerton, Wash.
Wright, Velma M., West Hartford, Conn.

Wright, Virginia H., Grandview, Mo.
Wukadinovich, Elodie, Riverside, Calif.
Wyks, Hollis W., Lambertville, N.J.
Wykes, Margaret L., Wilmington, Del.
Wyman, Raymond, Amherst, Mass.

Y

Yacobacci, Patricia, Garland, Tex.
Yakimoff, Rosemary, Philadelphia, Pa.
Yarbro, Fay, San Antonio, Tex.
Yates, Annabel, Staunton, Va.
Yates, Fred, Staunton, Va.
Yeager, Charles H., Washington, D.C.
Yearwood, Stephanie J., Doraville, Ga.
Yee, Diana, St. Paul, Minn.
Yelverton, Norma T., Fremont, N.C.
Yoder, Milton A., Staunton, Va.
Yoder, Valerie, Staunton, Va.
Yohner, Nancy C., Tallahassee, Fla.
York, Dian, Little Rock, Ark.
York, Janet A., Hamden, Conn.
Yoshinago, Christian, St. Charles, Ill.
Young, Annette S., Granada Hills, Calif.
Young, Elizabeth, Rome, Ga.
Young, Ellen, Pittsburgh, Pa.
Young, George, New York, N.Y.
Young, Sister Loretta, Buffalo, N.Y.
Young, Marilyn E., Amherst, Nova Scotia, Canada
Young, Michael L., Morganton, N.C.
Young, Mrs. Richard T., Austin, Tex.
Young, Sister Virginia, Buffalo, N.Y.
Youngelson, Ellen, Rockville Centre, N.Y.
Youngers, Retta T., Olathe, Kans.
Youngers, Richard T., Sulphur, Okla.
Youngs, Joseph P., Jr., Portland, Maine
Youngs, Mary S., Portland, Maine
Yount, Michael R., Sacramento, Calif.
Yust, William F., Rochester, N.Y.

Z

Zadek, Carol, Westbury, N.Y.
Zagata, Robert, Vacaville, Calif.
Zager, Judith, New Richmond, Wis.
Zaharavitz, Anna, West Hartford, Conn.
Zajac, Anna, Ontario, N.Y.
Zambrano, Robert, Washington, D.C.
Zanotti, Linda F., Auburn, Mass.
Zatz, Carol, Flushing, N.Y.
Zaversnik, Phyllis R., Denver, Colo.
Zechman, Joan F., Rochester, N.Y.
Zehr, Rachel, Normal, Ill.
Zenor, Jerry W., Yonkers, N.Y.
Zepf, J. Robert, Greenville, S.C.
Ziegler, Edward E., Cave Spring, Ga.
Zieziula, Frank R., New York, N.Y.
Ziev, Joel D., West Hartford, Conn.
Zimmerman, Mildred S., Hagerstown, Md.
Zook, George A., Jacksonville, Ill.
Zuckerman, Susan S., Columbia, Md.
Zuehl, Ron, Indianapolis, Ind.
Zugner, Penelope A., Rome, N.Y.
Zuhn, Rev. Donald W., Aurora, Colo.
Zumbrun, Ann H., Carmichael, Calif.
Zweig, Virginia, Wauwatosa, Wis.
Zwick, Leonard G., Rochester, N.Y.

Section Meetings

S–1—Nursery-Preschool (Ages 0–5)
Leader: Joel R. Hoff, coordinator,
Services for Deaf-Blind Children, Florida
S–2—Kindergarten-Primary (Ages 6–8)
Leader: Mary Alice Moon, upper primary
supervising teacher, Indiana School
S–3—Upper Primary (Ags 9–12)
Leader: Richard Reed, principal,
Missouri School
S–4—Intermediate (Ages 13–15)
Leader: Linda Prokes, intermediate
supervising teacher, Florida School
S–5—Jr.-Sr. High (academic)
Leader: Kenneth Kritz, principal,
Maryland School
S–6—Jr.-Sr. High (vocational & post-secondary)
Leader: Warren Fauth, principal,
California School, Riverside
S–7—Special Interest
Leader: Jerome Freeman, principal
Tennessee School

Interpreters

Bird, Martha—Idaho
Bjorlie, Henry—New York (Rome)
Brasel, Melvin—Minnesota
Brelje, H. William—Oregon
Brightwell, Randy—Nebraska
Cameron, Carri—Pennsylvania (Mt. Airy)
Cleary, Mary—New York (Mill Neck)
Cronlund, Philip—Connecticut (American)
Curtis, Gary—Texas
Dement, Sue—Minnesota
Deringer, Michael—MSSD
Dirst, Richard—Connecticut (American)
Hall, Harry—Illinois
Hoag, Ralph—New York (Rochester)
Hudson, John W.—Kentucky
Jones, Barry—New York (Rome)
Lowell, Neil—Wisconsin
McAdam, Colin—Minnesota
McChord, Winfield—Kentucky
McClure, William—Florida
McDonald, Loretta—Hawaii
Miske, Richard—Minnesota
Moylan, Carol—Kansas
O'Brien, Elizabeth—New York (NTID)
Parks, Lloyd—Kansas
Peck, B. J.—Oregon
Rosenstein, Joseph—MSSD
Roth, Stanley—Kansas
Royall, H. G.—North Carolina (Raleigh)
Shahan, Polly—Gallaudet College
Shipman, Eldon—West Virginia
Sparks, Fred—Connecticut (American)
Stangarone, James—New York (NTID)
Thomure, F. Eugene—MSSD
Traynor, Ruth—New York (Syracuse)
Williams, Elvira—Nebraska
Wilson, K. L.—Illinois
Youngs, Joseph—Maine (Gov. Baxter)

Recorders

Doris Alexander
Paul E. Barr, Sr.
Colleen Bingeman
Thelma Baudoin
Stephanie Chambers
Cynthia Cobb
Pat Cooper
Sam Cullison
Sally DeNardin
Bette Fauth
Barbara Flower
Elizabeth Foster
Jan Fuehrer
Richard F. Gays
Jan Harp
Nita Hays
Joseph Hodnik
Melody Hunt
Janet Kondas
Tom Lolan
Barbara May
Fred Miller
Sylvia Passo
Pat Pullum
Howard Rahmlow
Carolyn Rees
Patty Roadruck
Ruth Rusmisel
Susan Shults
Jerome F. Toohey, Jr.
Lillian Underwood
Dorthice Whatley
Carolyn Williams

PROGRAM

Sunday, June 24, 1973

9:00 a.m. to 8:30 p.m.—Registration, Marott Hotel.

2:00 p.m. to 5:00 p.m.—Piaget Workshop—NO FEE—University Room, Marott Hotel.

Coordinator: Mr. Sidney Wolff, coordinator of deaf education, State University of New York at Geneseo; Sister Mary Agatha Burns, teacher preparation in cognition, State University at Geneseo; Caryl S. Wolff, teacher preparation in cognition, State University at Geneseo.

7:30 p.m.—Windsor Ballroom, Stouffer's Inn.

Presiding: Dr. Armin G. Turechek, president, Convention of American Instructors of the Deaf, Colorado School for the Deaf and Blind, Colorado Springs.

Invocation: Congressman William H. Hudnut III.

"The Star-Spangled Banner"—Led by Sue Holverson; signed by Janine and Laura Gray.

"O Canada"—Led by Sue Holverson; signed by Janine and Laura Gray (Sherri Berger, pianist).

Greetings from the Indiana School for the Deaf, Indianapolis: Mr. Alfred J. Lamb, superintendent, Indiana School for the Deaf, Indianapolis.

Greetings from the City of Indianapolis: Mr. Charles Adler, administrative assistant, Mayor's Office.

Greetings from the State of Indiana: William T. Paynter, M.D., state health commissioner.

Response from Canada: Mr. Gary W. Batstone, assistant principal, Manitoba School for the Deaf, Winnipeg.

Response from the United States: Dr. Hugo F. Schunhoff, superintendent, California School for the Deaf, Berkeley.

Introduction of Speaker: Mr. Alfred J. Lamb.

Speaker: The Honorable Otis R. Bowen, M.D., Governor, State of Indiana.

Announcements: Dr. Armin G. Turechek.

Reception.

Monday, June 25, 1973

9:00 a.m. to 9:20 a.m.—Second general session—Grand Ballroom, Marott Hotel, Dr. Armin G. Turechek.

9:30 a.m. to 11:10 a.m.—Section meetings. S–1 Nursery-preschool section (ages 0 to 5).

11:10 a.m. to 12:00 noon.—Second general session (continued)—Speaker: Dr. Edwin W. Martin, Jr.

12:00 p.m. to 1:30 p.m.—Lunch.

1:30 p.m. to 4:10 p.m.—S–2 Kindergarten-primary (ages 6–8); S–3 Upper primary (ages 9–12); S–4 Intermediate (ages 13–15); S–5 Jr.-Sr. high (academic); S–6 Jr.-Sr. high (vocational and post-secondary); S–7 Special interest.

6:00 p.m.—Gallaudet dinner (open to all), Arabian Ballroom, Murat Temple, 520 North New Jersey.

Tuesday June 26, 1973

9:00 a.m.—Third general session, Grand Ballroom, Marott Hotel. Speaker: Hans G. Furth, Ph. D.

10:20 a.m. to 3:20 p.m.—Section meetings.

12:00 noon to 1:30 p.m.—Lunch; Special luncheons; University of Kansas teacher training alumni; University of Pittsburgh teacher training alumni.

3:20 p.m.—Fourth general session, Grand Ballroom, Marott Hotel. Business meeting.

5:30 p.m.—Convention picnic, Indiana School for the Deaf.

7:30 p.m.—Entertainment: Murat Temple Shrine Horse Patrol.

Wednesday, June 27, 1973

9:00 a.m.—Fifth general session, Grand Ballroom, Marott Hotel. Speaker: Dr. William E. Blanton.
10:20 a.m. to 4:10 p.m.—Section meetings.
12:00 noon to 1:30 p.m.—Lunch.
6:00 p.m.—Social hour.
7:00 p.m.—Little Paper Family dinner (open to all), Grand Ballroom, Marott Hotel.

Thursday, June 28, 1973

9:00 a.m.—Sixth general session—Grand Ballroom, Marott Hotel, Speaker: Miriam L. Bender, Ph. D.
10:20 a.m. to 2:20 p.m.—Section meetings.
12:00 noon to 1:30 p.m.—Lunch.
2:30 p.m.—Seventh general session—Grand Ballroom, Marott Hotel.
6:30 p.m.—Social hour.
7:30 p.m.—Convention banquet, Windsor Ballroom, Stouffer's Inn (open to all). Speaker: Mrs. Marcia Burgdorf.

FIRST GENERAL SESSION

Sunday, June 24

President TURECHEK. I hereby declare the 46th biennial meeting of the Convention of American Instructors of the Deaf in session. Congressman William H. Hudnut III will give the invocation.

(The invocation was pronounced by Mr. Hudnut.)

The audience joined in singing the national anthems of the United States and Canada.

President TURECHEK. We will now hear from Alfred Lamb, superintendent of the Indiana School for the Deaf.

GREETINGS FROM THE INDIANA SCHOOL FOR THE DEAF

Alfred J. Lamb, superintendent

Governor Bowen, Congressman Hudnut, President Turechek, platform guests, members of the Convention of American Instructors of the Deaf, and guests—the Indiana School for the Deaf extends a very warm welcome to all of you. We have tried to arrange for your visit to be a pleasant and profitable one. Please forgive our mistakes. We have not had much experience in hosting conventions of this magnitude. The last one hosted by the Indiana School for the Deaf was in 1870. It has been impossible to communicate with anyone associated with that one.

But superintendents soon learn how to ad-lib. At the beginning of this past school year I called all members of our staff together for a meeting in the auditorium. I tried to introduce the subject quite candidly, stating that it takes many hands and minds working together to stage a successful convention. The staff does the work and the superintendent gets the credit. Think how lucky you are to be here in Indiana for an event which happens *here* only once in 100 years. Needless to say, they gave me a standing ovation for the courage I displayed in volunteering their services.

Seriously, the staff has worked very hard and if there is anything right about this convention they deserve the credit. They have planned everything and they have done all the work. They only made one request of me—get out of the way. That I did. I got clear out of sight. My golf has improved considerably, but my handicap is still a secret in case any of you sandbaggers have any ideas. To keep you up to date on changes in the program, tours, golf, and other forms of recreation, a daily bulletin will be issued. The first one is available to you now at the convention office in the Marott Hotel in case you have not received it. These bulletins will also be available at each general session and at the office. Changes will also be announced at the opening sessions. We encourage all of you to arrive promptly at 9:00 a.m. for each general session. A door prize will be awarded at each general session including the business meeting on Tuesday afternoon and the closing session on Thursday afternoon. We may also have door prizes at the picnic and at the convention banquet. Don't forget to bring your tickets to all of these events.

The traditional convention picture will be taken at the picnic on the Indiana School for the Deaf campus. We hope all of you will take time to visit our campus. Bus transportation to and from the school is provided in mornings and evenings.

Have a good convention. Work hard, Play hard, Drive safely. Thank you.

(Mr. Charles Adler, administrative assistant to the Mayor of Indianapolis, extended greetings on behalf of the Mayor and the city of Indianapolis.)

President Turechek. Thank you, Mr. Lamb and Mr. Adler. William T. Pyanter, state health commissioner, will extend greetings from the State of Indiana. Dr. Pyanter.

GREETINGS FROM THE STATE OF INDIANA

William T. Pyanter, M.D., state health commissioner

President Turechek, Governor Bowen, ladies and gentlemen: It is indeed an honor to be able to offer you greetings from the State of Indiana. This convention brings together a unique and special group of professionals; a group whose efforts over a very long time have succeeded in establishing standards of expertise and sophistication in educational programs for the deaf. It is gratifying to observe, both historically and presently, that professionals of this stature do not find their efforts limited by geographical boundaries, be they within a nation or between nations.

This convention's activities and deliberations over the next few days will provide both the leadership and ideas for continuing excellence in this special area of education.

It is with a sense of appreciation and anticipation that I offer you our warmest welcome and sincere best wishes for a productive and successful meeting.

President Turechek. Thank you, Dr. Pyanter. We are pleased to be here. Mr. Gary Batstone, Winnipeg, will respond for Canada. Mr. Batstone.

RESPONSE FROM CANADA

Gary W. Batstone, assistant principal, Manitoba School for the Deaf, Winnipeg, Canada

Governor Bowen, Doctor Turechek, honored guests, ladies and gentlemen: Mr. Donald Plummer of the Manitoba School, who was originally asked to make this reply, very kindly passed the opportunity of attending this convention to me and with that privilege, the honor of responding on behalf of Canadian educators of the deaf to the very warm welcome extended to us this evening.

While yet a fledgling in the education of deaf children, I have become very aware of the commonality of purpose represented by these meetings. The political boundaries that separate our two countries seem very insignificant and meaningless when we gather in this way to share our common aspirations in the education of the deaf.

It has been 156 years since the establishment of the first school for deaf children in the United States. Thirty-one years after that Canada saw the establishment of its first classes for deaf children. Since that time this organization has bound us together in our pursuit of better programs and methods.

Perhaps this year we Canadians look for a greater sharing of ideas than ever before as we, like you, have undergone considerable soul searching from within and from without. The Canadian government has recently completed a national study of facilities and opportunities for deaf and hard of hearing people, the initial outcome of which may be the establishment of an organization to represent the hearing impaired and those working with the hearing impaired on every level. My home province of Manitoba has also just completed a similar study, with recommendations for change. Major changes are being made in other provincial programs for the education of the deaf. Indeed, agitation for change is stronger than ever before in almost every sector.

Two months from this day the first National Convention of Canadian Teachers of the Deaf will convene in Belleville, Ontario. No doubt such a meeting is the result of a desire for a greater sharing of ideas, with benefits such as we have experienced at these international gatherings.

And so we Canadians have come to this 46th convention anticipating blessings, and in hopes that our experiences might be of value to you.

With affection and esteem we say a very sincere thank you for your invitation and warm welcome to Indianapolis.

President Turechek. Thank you, Mr. Batstone. We will now hear from Dr. Hugo Schunhoff, California.

RESPONSE FROM THE UNITED STATES

Hugo F. Schunhoff, Ed. D., superintendent, California School for the Deaf, Berkeley

Dr. Turechek, Mr. Lamb, Governor Bowen, Congressman Hudnut, Mr. Adler. Dr. Pyanter, honored platform guests, ladies and gentlemen: It is a very special privilege for me to represent the members of this convention from the United States in responding to your warm welcome because this 46th meeting of the Convention of American Instructors of the Deaf will be my last opportunity to participate as an active member in my current post of duty.

Having been somewhat of a nomad, together with Mary Jane, in our younger days in this fine profession, I hope I may speak as a true representative for those from the states in which we have lived. So, I bring our appreciation from Minnesota with its thousand lakes and its Paul Bunyan lore, and from all of the states of the North; from your neighboring state of Illinois with its corn and its soy beans, from Missouri with its Ozarks, and all of the states of the Middle West; from the great state of Texas with its blue bonnets and its Alamo, and from all the states of the Southwest and the South; from the District of Columbia with its Watergate; from West Virginia with its beautiful hills and all of the states of the East and the Northeast; and from the golden state of California with its redwoods, its date palms, its Golden Gate, and of course its Berkeley, from the Rocky Mountain states, and from those beyond our western shores.

We are delighted, after 103 years to have this convention return to the wonderful Hoosier state. We have passed through many times going to and returning from meetings of the Convention of American Instructors of the Deaf. This time we have come to spend the week with you. We shall enjoy your Hoosier hospitality and we know that the week will be a profitable one for the deaf children whom we serve.

President Turechek. Thank you, Dr. Schunhoff. It is my pleasure to present to you again Alfred Lamb, who will introduce the principal speaker in this evening's program. Mr. Lamb.

(Mr. Lamb introduced the Honorable Otis R. Bowen, Governor.)

ADDRESS

Otis R. Bowen, M.D., Governor, State of Indiana

I'm pleased and honored to be able to address this keynote session of the 46th Biennial Convention of American Instructors of the Deaf, and to—on behalf of the citizens of the State of Indiana—extend the warm handshake of Hoosier hospitality to each of you.

The United States has many unique institutions which are responsible for much of the greatness of our Nation and its people. The colonization of our Nation—the organization of our public administrative units—the establishment of our status as an independent nation among the community of the world's nations, are all unique chapters in the American experience.

As our American democracy began to take form, so were our basic institutions formed. Human and civil rights began to be identified and provided proper sanctuary—the role of religion in our society was secured—the organizational pattern of our civil governmental structure was formulated—and the American attitude toward education was given voice and form.

From our very beginning, education in America was a unique institution. Primarily it was unique because—from the outset of our colonization—education was conducted in different ways from one settlement to another. Because America was colonized by many nations of the world—each with its own educational tradition—so were these many different educational characteristics reflected in our colonial patterns. As our country grew from a loosely organized collection of colonies to a status of a true Nation, these differing educational traditions grew side by side, and were spurred to greater service by each other's existence.

In some nations—predominately European—educational systems were nationalized and hammered into political arms of national policy, standards were uniformly set and rigorously applied for admission, graduation, and entrance into professions. Education elitism was the order of the day, and in some areas fantastic educational achievements were recorded.

But in America, two different and separate educational efforts were mounted. One effort was to expand the quality of educational services available, and the second to increase the number of those who had access to the complete range of those services. In America, education was not to be the tool of the State to implement its own national policies, it was to be a freely accessible vehicle for social mobility—freely accessible to *all* people.

Indiana played a role in the development of that system, for in 1846 Indiana became the first State in the Nation to provide free education for its deaf citizens. That commitment to the education of the profoundly deaf is maintained today—more than 125 years later. The Indiana School for the Deaf, located on a beautiful campus here in Indianapolis, is the second largest residential school for the deaf in the Nation. Only one other State, Texas, enrolls more residential deaf students than Indiana—and when a State is exceeded only by Texas, you know that they must be doing something right!

Indiana's School for the Deaf is an outstanding institution with a proud record of service to the deaf and the State of Indiana. It has assembled a distinguished staff of instructors of the deaf, and it provides a top notch education for Hoosier profoundly deaf children, whether their talents and interests be academic or occupational. The Indiana School for the Deaf is a fine institution and I know that it will continue to serve the needs of Indiana's deaf in an outstanding manner for many, many more years.

American education *is* truly unique. It is unique for it exists to serve the educational needs of all students, students with talents exceptional in their presence or exceptional in their absence. It is further unique in that the total potential for formal education is limited only to the talents and desire of the student, that no student who has the ability and the desire to profit from a particular education is prohibited from pursuing that course because of social, political or religious reasons.

It has not been easy to build such a program, nor is it easy to maintain and improve its operation. It is sometimes true that programmatic reach exists beyond our true grasp. It is true that at times there are not enough funds to stretch as far as our intentions would reach, and this disparity puts a "wrinkle" in our educational system. But these situations too can have long range beneficial educational effect upon our system, for many times desired and beneficial changes can only be gained by the absolute necessity of the situation. Curricular organizations, staffing patterns, administrative structures, and educational cooperative agreements often have come about primarily because the previous system could no longer be financially or administratively operated.

Evolution from a one room school house to a modern educational complex, from hornbook to computer, and from schoolmarm to master educator has not always been easily or painlessly accomplished. Perhaps it is inevitable that ever continuing growth and change must be accomplished with a certain amount of pain or awkardness.

But as certainly as what stands proudly today as a monument of substantial educational achievement was unseen short generations ago, what tomorrow holds for all of education may lie beyond today's grasp or conception.

Because we live in the midst of change, because we seek only change that is positive and indicative of true human progress, we today must stand prepared to wisely build our hopes for the future upon the sound foundations of the past. We must stand ready both to build upon that which is sound and to reject that which is obsolete or no longer educationally viable, even though that rejection may incur momentary pain. For with education, society stands perpetually in the month of January. We stand reflecting on the trials and accomplishments of the past and looking hopefully ahead to the opportunities offered by the future. In this regard, not only does education for deaf children stand at an educational crossroads, but the education of all children stands at a crossroads. This position is not new however for because our educational system reflects a changing pattern within our Nation, all of education is a unique process of improvement that at times is *revolutionary*, at times is *evolutionary*, but is at all times moving forward.

On behalf of the people of the State of Indiana I wish you well in the labors of your career of service to the deaf citizens of our Nation. And in that service I want to commend you for those achievements you have made, and wish you well in those efforts that lie before you. May we all enjoy the continuing support of the public in the cause of education, for that is the point from which springs our strength, guidance, and direction.

President TURECHEK. Dr. Bowen, we appreciate your giving us time from your busy schedule to be with us and to favor us with this fine address. This concludes the program for this evening. We will see you at 9 o'clock tomorrow morning.

THE EFFECTIVENESS OF VISIBLE ENGLISH AND THE COMBINED SYSTEM IN LANGUAGE ACQUISITION

Alma L. Alexander, Ed. D., principal, Louisiana State School for the Deaf, Baton Rouge

For years educators of the deaf have been confronted with the serious problem of poor academic achievement of deaf children and with a bitter controversy over the selection of an appropriate communication method to improve that academic achievement. This problem has been compounded by a lack of research of different communication methods. To make matters worse, *every* educator of the deaf is quite positive that his approach is *the* approach. We are without doubt the most opinionated profession in the country. Whether the amount of experience involves one or 21 years, the teacher has the absolute assurance that he or she has *the answer*.

Even with all the answers, it remains important that some means of raising the educational achievement of deaf children be found. Kohl (1966) made a study of children terminating their education in schools for the deaf. He used U.S. Government statistics for 1961–62. Of the 1,104 students age 16 and over who left school for one reason or another, the 501 graduates had a grade level range of 3.1 to 12.8 in school achievement with a mean of *4.7*. This indicates that the deaf population is between 4 and 7 years retarded educationally.

According to the Babbidge Report of 1965, of 920 deaf students leaving public residential schools in 1963–64, ". . . at no age was the median grade as high as the seventh grade despite the fact that most of those included in the survey were at least of high school leaving age (in Quigley, 1969)."

The language level of the deaf actually may be lower than indicated by the above figures. In a study using "Cloze" procedures with deaf children matched with hearing children on reading scores on standardized achievement tests, Moores (1967, p. 100) shows that the achievement test is a poor indicator of written language ability and gives a spuriously inflated estimate of the psycholinguistic abilities of deaf children.

According to Quigley (1969, p. 13),

> It is commonly known among persons involved in the education of deaf children that the level of the students on reading tests is usually one or two years lower than their level on an educational achievement test. This means that most deaf children graduate or terminate from educational programs with a reading level of approximately fourth grade or lower.

A study of Furth (1966) is cited to support this contention (Quigley, 1969, p. 13).

No study exists comparing children who have had total environmental exposure to Visible English with those who have utilized the Oral and Simultaneous communication methodology. Only one study has been made of the influence of fingerspelling on the development of language (Quigley, 1969). In Quigley's study of his older subjects, however, no intervention was made in the method of communication used outside the classroom. Quigley said that:

> While all three experimental schools used the Rochester Method in the classroom with the subjects selected for the study, communication among the children and school personnel outside of the classroom was conducted in the usual combination of the language of signs and fingerspelling, which is typical of most public residential schools (Quigley, 1969, p. 18).

Teachers in the Louisiana State School for the Deaf have empirical evidence in achievement test scores and in written language work that the level of language has improved since the initiation of the method of Visible English by Edward L. Scouten in that school in 1962. The investigator felt that, if this improvement could be substantiated in a reliable research undertaking, deaf educators throughout the country would be provided with a basis for use of the Visible English communication methodology. With this in mind, research was undertaken for the purpose of comparing read, written and spoken and/or spelled language ability of children who had utilized the Visible English communication methodology with that of children who had utilized the Oral Simultaneous communication methodology in two schools for the deaf: Louisiana State School for the Deaf and the Tennessee School for the Deaf.

Definition of Methods

Visible English is the use of speech and fingerspelling simultaneously or the use of writing in all expressive communication with deaf children, the purpose being to make English visually perceptible to the child with an auditory impairment. Speechreading and reading serve as the receptive language processes. Amplification is used when the child has residual hearing so that he can benefit from the use of a hearing aid. This method is used inside and outside the classroom. Success of the method depends upon early identification of deafness and immediate initiation of the method. Cooperation of parents and family in the use of fingerspelling and speech is encouraged. When the method used in the Louisiana State School for the Deaf was given the name "Visible English" the only distinction between this method and its forerunner, the Rochester Method, was early initiation of speech with fingerspelling, which had not been the practice at the Rochester School for the Deaf since the 1940's. It appears that difference has been resolved, since the Rochester School has been using fingerspelling with prelingually deaf three-year-olds since the 1970–71 school year.

The term Oral and Simultaneous Method refers to the combined systems used in most schools for the deaf in the past, prior to the more recent use of signs with young deaf children. Speech, speechreading, aural amplification, writing, and reading were used during the first three or four years of school and then signs and fingerspelling were introduced. The Simultaneous Method is now called Total Communication, the only difference being earlier use of signs and fingerspelling in the Total Communication approach.

Description of Schools

The Louisiana State School for the Deaf is a residential school for the deaf with a population of 350 children between ages 4.8 and 19. Local children, accounting for approximately ten per cent of the school population, usually attend classes but do not reside at the school. For eight years prior to this study the school has made an attempt to have every person who works with the children use Visible English in all areas and to elicit the support of parents in maintaining Visible English in the homes. Classes in Visible English for parents have been held on campus each year since the method was introduced, but because of the distance sometimes involved participation has not been good. It is estimated that one-third of the parents of the children in the present study are able to fingerspell and fewer than that number make consistent use of the method. During the past three years the Louisiana State School for the Deaf has maintained a state-wide Parent-Pupil Education Program wherein teachers travel to the homes of all preschoolers. These teachers help parents learn to use Visible English so that parental support is much greater for the younger children than for the sample used in the present study. This gives some indication of the gradual progress which has been made. There has been apparent increased usage of Visible English on campus each year, since all new teachers and other new personnel learn the method and use it exclusively.

The Tennessee School for the Deaf is a residential school with a population of 404 children between the ages of 4.8 and 20. Some local children, approximately twelve per cent of the school population, attend the school on a day-school basis. For over 30 years the Oral Method has been used in the Primary Department and the Simultaneous Method has been used in other areas of the school. During the year preceding this study, an attempt was made to adopt the Visible English Method. During the first year of its use, the teachers in the Primary Department used fingerspelling and speech. Most of those in the elementary and upper school departments were less successful in the change from the Simultaneous Method. Counselors in the dormitories used Visible English intermittently and signs were evident in the communication of the children above age eight.

History of the Visible English Method

Edward L. Scouten has been largely responsible for the revival of the Rochester Method, which is the forerunner of Visible English. Scouten (1942) traced the origin of the Rochester Method through the Westervelt papers given to him by a former secretary to Zenas Freeman Westervelt, the man who initiated the method in the Western New York Institution at Rochester, New York. This method was utilized and evaluated at Westervelt's school and later introduced to leaders in deaf education at a convention held in Columbus, Ohio in 1878. In a paper entitled "The Disuse of Signs" Westervelt described the method and stated that his school required that all communication be carried on by means of English words, either spelled by the manual alphabet, spoken or written.

The Convention, under the influence of Dr. Isaac Lewis Peet, allowed Zenas Westervelt to continue his "experiment." A second report was given at the Convention of Educators of the Deaf in Berkeley in 1886. At this time Westervelt stated that English had practically become the only language used in the school.

A newspaper article from the *Union and Advertiser*, March 18, 1887, Rochester, New York, gives an account of a visit to the Western New York Institution by Alexander Graham Bell. Dr. Bell praised the school and its superintendent for the method of instruction used. On the basis of seeing the written language of the children, he said, ". . . I am free to declare that the system of the entire and distinct use of the English language and the abolition of the sign language is the best method that can be used (in Scouten, 1942, p. 15)."

In 1896 the American Association to Promote the Teaching of Speech to the Deaf held its summer convention in Mt. Airy, Philadelphia, Pennsylvania. The following description of the work at Rochester appeared in the Report of the Proceedings:

> A method that may be styled the Rochester Method from the institution in which it had its rise, and in which it has been for twenty years persistently practiced, entirely discards the language of signs as being detrimental to deaf youth in acquiring a knowledge of language and facility in its use. It insists upon the English language expressed, by means of manual alphabet, writing and

> speech. . . . The officers of the Rochester School, several of whom have been connected with other institutions where the sign language was the method of instruction, are enthusiastic in their advocacy of this method of instructing the deaf, for which they claim the advantage and the credit of teaching English by the use of English (Scouten, 1942, p. 13).

Dr. Westervelt died in 1918. In 1924 and 1925 a survey of schools for the deaf in this country was sponsored by the National Research Council. The publication of the results of that survey showed that the Rochester School produced better than usual educational achievement in relation to the intelligence levels of the children as indicated by the Rochester School's attaining the highest plus score of any of the 42 schools for the deaf represented in the study, where a plus difference represented better educational achievement and a minus difference indicated poorer achievement (Scouten, 1942, p. 20).

In 1917 T. C. Forrester was appointed head of the Rochester School. Shortly after that time the Rochester Method ceased to be used in the preparatory and primary levels at that school. The reason for this is not known.

Quigley gives the following explanation of the failure of Rochester to use fingerspelling with young children during the 1940's:

> The abandonment of the method in the primary grades apparently was due to the feeling on the part of parents and other persons connected with the school that the developments in amplification and the use of residual hearing which resulted from work with hearing-impaired war casualties could best be utilized by young deaf children if no manual means of communication were involved in their instruction. No body of evidence ever has been presented to support this point of view (Quigley, 1969, p. 7).

The California School for the Deaf at Riverside, California next used the Rochester Method in 1951, beginning instruction with this approach not with beginning students but with children of 12 or 13. The New Mexico School for the Deaf began using the method in 1958 (Quigley, 1969, p. 7).

In 1962 Dr. Lloyd V. Funchess became superintendent of the Louisiana State School for the Deaf. He employed Edward L. Scouten as principal and gave him carte blanche to institute an appropriate communication method for educating deaf children. Scouten introduced the Rochester Method in the Louisiana school in the fall of 1962. The process of change from the Oral and Simultaneous Method was a gradual one and it was not until 1970–71 that every employee at the school was required to use the system.

Funchess felt that it was vital for the young deaf child to see English during his language learning years. He requested that Scouten develop a name for the method as practiced in the Louisiana school. The term Visible English was selected.

RATIONALE FOR USE OF VISIBLE ENGLISH

The major channels for learning are the auditory and the visual sensory modalities. When one of these channels, the auditory in the case of the deaf child, is impaired, the other major modality must be utilized for the perception of language.

Use of Speechreading

Language may be presented orally and be received by the deaf child through the use of speechreading. For the deaf child who has developed only limited language, speechreading is a difficult skill. Research has demonstrated that only one-third (Pauls, 1964) or one-half (Fusfeld, 1958) of the speech phonemes are visible on the lips.

There are differences of opinion as to the correlation between intelligence and ability to speechread. Myklebust (1964, pp. 248–249) cites a study by Costello in which she used the Knox Cube Test, Digit Span, Wechsler Picture Arrangement, and Progressive Matrices Test. Of the memory tests, only the one for memory for symbols correlated with ability to speechread. Scores on the Wechsler Picture Arrangement Test, which is a test of social perception, correlated significantly with speechreading ability. There was no correlation between scores of the deaf on the Progressive Matrices Test and ability to speechread.

Myklebust (1964, pp. 249–251) studied speechreading ability of day and residential children as rated by teachers and compared this rating with scores on the Draw-a-Man Test. He concluded that either teachers rated the brightest children as being the best speechreaders, or intelligence as measured by the Draw-a-Man Test is related to speechreading ability.

Quigley and Frisina (1961) used the Chicago Non-Verbal Examination to measure intelligence and the Utley Film Test (Form A) to measure speechreading ability of 120 deaf students from residential schools and 120 deaf students from day schools. A correlation coefficient of .16 indicated little relationship between intelligence and the ability to speechread.

There is some evidence that there is a correlation between language level and ability to speechread. In 1970 Sharp found that ability to synthesize, which comes with a knowledge of language, influences ability to speechread. She administered eight tests of visual closure, movement closure, and short term visual memory to 18 good speechreaders and to 19 poor speechreaders ages seven, eight and nine who were profoundly deaf. She found, in general, that good speechreaders are superior to poor speechreaders on all three of these (Klopping, 1971, p. 22).

Myklebust (1964, pp. 251–254) found a correlation between ability to read as measured by the Columbia Vocabulary Test and speechreading ability. He found the same correlation existed between written language as measured by the Picture Story Language Test and speechreading ability. Children with better Sentence Length scores, better Syntax scores and better Abstract-Concrete scores were rated by teachers as being the best speechreaders.

Since this language facility appears to be a prerequisite for speechreading ability, it would appear that deaf children who are so lacking in ability to use language would be handicapped by an approach in instructional activities that requires this ability.

Use of Signs

Language may be presented to the deaf child manually by the utilization of the sign language. The American Sign Language, however, does not employ the syntax of the English language; that is, it has none of the inflectional features of English, especially those signs used by children (Stokoe, 1969), nor does it employ the correct English word order.

Some proponents of the sign language have realized these as limitations of signs. Recently, several attempts have been made to develop a sign language that would employ English syntax. Signed English, sometimes called Siglish,

> . . . uses signs and fingerspelling according to basic English syntax. Manual English and SEE (Seeing Essential English) have added morphemes or word parts which have meaning such as word endings, verb tenses, prefixes and suffixes. Visual English is a linguistically based system which uses American Sign Language vocabulary, plus a more elaborate vocabulary of morphemes, which take on new meanings according to the context in which they are used (Kent, 1972, p. 93).

Since there seems to be some confusion regarding which of the "new signs" should be used and since these forms of communications have not been in use long enough to have demonstrated results as far as language acquisition is concerned, only the American Sign Language which is used by most deaf people in this country will be discussed in this paper.

Bellugi and Klima emphasize the fact that sign and speech are different in that they are perceived by different organs, the eyes and the ears. They state, ". . . sign language is not simply parallel to or derivative of spoken English. In its deepest and most interesting respects, sign seems to be a language in its own right, with properties that are different from spoken languages in general and from English in particular (Bellugi and Klima, 1972, p. 61)." Sign language has its own grammatical properties, but these are not identical to those of English. Instead, they are spatial in nature and are based on movement and position of the hands in space. For example, subject is differentiated from object by movement of the sign toward or away from the speaker. Intonation is provided by space: if the hands pause in midair, a question might be indicated. A change in movement may add negation. Movement may indicate tense. For example, signs for the future move forward from the speaker while those for the past might move toward the speaker and over his shoulder (Bellugi and Klima, 1972, pp. 63–64).

In the opinion of the investigator, the American Sign Language may be useful and helpful for adult communication but, for the reason that it does not have the inflectional and morphological characteristics of English, it should not be used to teach deaf children to read, write and speak the English language. To do so is to present them with an unnecessarily difficult task.

Since the sign language is not an orthographic language, it cannot conveniently be put into print. Recently an effort has been made to translate a few children's stories into signs. To read these stories, the child would have to learn a symbol system different from the one he must learn to read all other written material. The effort detracts from signs in that the action and spatial quality are removed.

Louie J. Fant, Jr. (1972), author of a text for teaching the sign language, calls the American Sign Language a language in its own right and not an abbreviated English. He lists the following facts regarding the grammar of the American Sign Language as being different from the grammar of English:

(1) Signs are not inflected a swords are. The sign "seat" is unchanged for *sit*, *sits*, *sitting*, *sat*.

(2) There are no articles.

(3) There is no passive voice.

(4) There are no moods.

(5) There is no sign for the verb "to be."

(6) Gender is not denoted in the signs.

(7) For pronouns, pointing usually suffices for nominative and objective cases, while the open hand toward the person intended denotes possession.

(8) Prepositions that show location or movement are signed; those which serve as function words are not signed.

(9) Movement is inherent in a sign and varies a great deal. Movement establishes the subject-object relationship and can be used to designate duration. Repetition of a sign denotes the plural. Size is denoted by extension or contraction of a sign. Movement might change the part of speech function of the sign. For example, the sign for the adverb *still* is identical to that for the verb *continue*, except there is movement with the verb form.

(10) Syntax does not necessarily follow English word order. "He went home after he finished his work," would be signed "finish work go to home." Sequence is often changed to set the stage and then to elaborate. For example, "As a beautiful added touch, each book is a different color," would be signed, "each book different color make more pretty."

(11) Signs do not indicate tense. Time indicators are used to designate when an event occurred; for example, *finish*, *later*, *tomorrow*.

(12) Question forms are primarily shown by facial expression.

(13) Negation is generally indicated by making a sign while shaking the head. The sign for *no* might mean, "No, thank you." The sign *not* means "it's not my fault," or a denial. *Illegal* implies that there is a rule or law which prohibits something. *Refused* implies a conscious decision.

These are some of the differences between the grammar of signs and that of English. Fant says, "The language of deaf people is a legitimate, respectable, and unique language (Fant, 1972, p. 5)." The writer agrees and feels that the sign language serves a good purpose with deaf adults. It should not be expected to serve as a communication vehicle for teaching English any more than should French or Spanish.

RESEARCH COMPARING METHODS OF COMMUNICATION

Although the use of speech supplemented by fingerspelling, or Visible English, is not a new method, little research had been accomplished to evaluate it. Myklebust says:

> Methods utilized for developing language in children with deafness are based on theory and experience rather than on scientific evidence. This is not surprising inasmuch as there is no way in which the methods used to teach any child can be completely verified. . . . However, the need for scientific study must be clearly recognized. Many claims and counterclaims have been made regarding the effectiveness of a particular methodology. Only through objective study can such claims be evaluated (Myklebust, 1964, p. 240).

The few studies which have been done are reported in this section.

For empirical evidence that English can be developed through the use of Visible English, an autobiographical case study written by

Howard T. Hofsteater provides an account of how his parents fingerspelled everything that was said to him from the time he was an infant in the cradle. Hofsteater relates that he had ". . . practically the same language background that the average normal hearing child enjoys before entering school (Hofsteater, 1959, p. 17)."

Johnson (1948) made a study of 253 children in three separate departments (Manual, Oral and Acoustic) of the Illinois School for the Deaf to determine which communication method could be used most successfully with each group. She used five tests which consisted of ten simple sentences presented to each group through speech-hearing, lipreading, hearing plus lipreading, fingerspelling and signs plus fingerspelling. The pupils wrote the sentences as they understood them. The Oral and the Manual groups scored significantly higher on fingerspelling than on any of the other four methods. The Acoustic group scored second highest on fingerspelling, with their highest score being on hearing plus lipreading.

Johnson concluded, "Although fingerspelling as judged by the test scores can be considered only fairly accurate as a method of communication, it is for this group as a whole and for the separate Manual and Oral groups, the most satisfactory of any of the methods of communication tested (Johnson, 1948, p. 310)." Johnson also concluded that it would seem advisable to replace the use of signs and fingerspelling or lipreading with fingerspelling alone for the manual and oral groups.

Quigley made a study of the influence of fingerspelling on the development of language, communication and educational achievement in deaf children. Two studies are reported. In the first, no intervention was made in the programs of the experimental schools involved. Three residential schools for the deaf were used as experimental schools. Fingerspelling with speech was used as the method of communication for all instruction; however, the usual signs were used outside class. These schools were matched with six residential schools which used the Combined System, that is, the Oral Method in the primary grades and the Simultaneous Method thereafter. For the last two of the five years in which testing was accomplished three of the control schools were dropped from the study to reduce the testing load.

More than 200 subjects were selected on the basis of the following criteria:

(1) sensory-neural loss of at least 75 db (ASA) in the better ear in 500, 1000, 2000 cycles per second range,
(2) I.Q. of 80 or better on the WISC or the WAIS,
(3) age at onset three years or younger, and
(4) no apparent handicap other than deafness.

Subjects were tested on speech intelligibility, speechreading ability, receptive fingerspelling, educational ability, and written language each year for five years.

The experimental group was superior in ability to read fingerspelling, on most of the measures of educational achievement, including reading ability, and on a number of measures of written language ability. There were no significant differences between the two groups on measures of speechreading ability and speech intelligibility.

In the second study there was better experimental isolation of the independent variable, fingerspelling, since the selection of subjects, the selection of teachers and structuring of the out-of-class environment were under the control of the investigator. The purpose of this study was to determine the effectiveness of the use of fingerspelling with younger deaf children when fingerspelling was used systematically in and out of class.

Thirty-two prelingually deaf subjects, age 3.5 to 4.5, with normal intelligence and no other apparent disability in two schools for the deaf were selected as subjects. Parents, dormitory personnel and teachers of the experimental group were taught the Rochester Method. The children were tested at the end of the fourth year on ability to read fingerspelling, reading ability, written language ability and speechreading ability. The experimental group had higher mean scores on every test except for one of the five measures of written language ability, and in most cases the differences were of statistical significance.

Quigley drew the following implications from the two studies:

(1) The use of fingerspelling in combination with speech as practiced in the Rochester Method can lead to improved achievement in deaf students, particularly on those variables where meaningful language is involved.

(2) When good oral techniques are used in conjunction with fingerspelling, there need be no detrimental effects to the acquisition of oral skills.

(3) Fingerspelling is likely to produce greater benefits when used with younger rather than older children. It was used successfully in the experimental study with children as young as 3½ years of age.

(4) Fingerspelling is a useful tool for instructing deaf children but is not a panacea (Quigley, 1969, pp. 94–95).

In a study to determine the level of comprehension of language of profoundly deaf students, Klopping (1971) used three auditory-visual stimulus conditions: speechreading with voice, the Rochester Method (Visible English) and total communication (Simultaneous Method) to test 30 students enrolled at the Arizona State School for the Deaf. The students were selected on the basis of the following criteria:

(1) an I.Q. of 90 or above,

(2) a hearing loss of 75 decibels or more in the better ear (ISO),

(3) a reading score of 4.0 to 5.5 in Paragraph Meaning, Stanford Achievement Test,

(4) at least two years in a state residential school,

(5) oral training during the first four years in school,

(6) onset of hearing loss by age three, and

(7) no visual problems that interfered with academic functioning.

Of the three methods of communication, total communication was superior, resulting in 76.35 per cent comprehension; the Rochester Method resulted in 55.50 per cent comprehension; and speechreading with voice resulted in 35.15 per cent comprehension of language. There were no significant differences in ability to understand language of residential and day-residential students, students of average and above average intelligence, nor male and female students.

Klopping points out a significant fact revealed by the study, ". . . almost ⅓ of the subjects did not understand language at an adequate level under any of the methods of communication (Klopping, 1971, pp. 59–60)."

It should be noted that the subjects in Klopping's study had utilized the Simultaneous Method in the Arizona State School for the Deaf. A recommendation for future research was that the study be replicated with students in oral education programs and in programs utilizing the Rochester Method with young deaf children.

PURPOSE AND PROCEDURE

As indicated previously, the purpose of the present study was to compare read, written and spoken and/or spelled language ability of children who had utilized the Visible English communication methodology with that of children who had utilized the Oral-Simultaneous communication methodology.

The subjects for this study consisted of 23 children between the ages of 12 years and 13 years 11 months and 23 children between the ages of 14 and 15 years 11 months from the Louisiana State School for the Deaf and the same number of children in identical age groups from the Tennessee School for the Deaf. The 12–13-year-olds were used because those from Louisiana had utilized Visible English for all their eight years in school. The 14–15-year-olds were used to extend the age range to include ages when deaf children usually reach a plateau in language development.

The following criteria were used for selection of subjects:

(1) an intelligence quotient of 90 or above as measured by the Performance Scale of the Wechsler Intelligence Scale for Children of the Wechsler Adult Intelligence Scale,

(2) a hearing loss of 75 decibels or more in the better ear based on an average of the pure tone thresholds in the speech range, i.e., at frequencies of 500, 1,000, and 2,000 cycles per second according to International Standards Organization reference,

(3) onset of hearing loss by the age of three,

(4) at least five years in a residential school for the deaf, and

(5) no other major handicapping conditions.

Information regarding socio-economic status was available for 26 of the Tennessee children. It should be noted that information was more readily available from records of lower income levels since other state agencies with responsibility for granting aid to these families had made these records available to the school. The parents of four of these students were in the income bracket of below $5,000, 18 were in the $5,000 to $10,000 bracket, and four were in the $10,000 to $20,000 range. A similar picture existed for the Louisiana children. With information available for 34 of the Louisiana children, the income brackets were as follows: four below $5,000, 16 from $5,000 to $10,000 and 11 from $10,000 to $20,000. Of the total Tennessee sample 16 were from urban areas. There were 15 children from urban areas in Louisiana. From these data it appears the Tennessee and Louisiana groups are similar in regard to economic level.

There were no black children in the Louisiana sample, while there were five in the Tennessee group. Tennessee had four day pupils; Louisiana had two. This information would appear to be of less importance to this study than would the economic ranges listed above.

Deaf relatives were listed as follows:

12- and 13-year-olds:	
Visible English	3 students with deaf siblings. 1 student with deaf parents.
Oral-simultaneous	3 students with deaf siblings. 1 student with deaf parents. 2 students with deaf parents and siblings. 1 student with deaf uncle.
14- and 15-year-olds:	
Visible English	3 students with deaf siblings. 2 students with deaf parents. 4 students with deaf parents and siblings.
Oral-simultaneous	6 students with deaf siblings. 1 student with deaf parents and sibling.

Several studies have been made comparing educational achievement of deaf children of deaf parents with that of deaf children of hearing parents (Stevenson, 1964; Stuckless and Birch, 1966; Meadow, 1967; Vernon and Koh, 1970). In each case, the deaf children of deaf parents were superior. The present investigator feels this might be attributed to (1) the deaf parents' knowledge of the handicap of deafness, therefore an early acceptance of the infant with deafness, (2) early communication by the deaf parents, regardless of the means of communicating, and/or (3) undiagnosed central nervous system involvement of the children of hearing parents, where deafness is not hereditary. If these assumptions are true, it appears that the four groups under study here are well matched except for the younger group of Visible English children who might be at a disadvantage in regard to the early communication and heredity factors.

An analysis of variance indicated that the two groups were identical as far as intelligence and hearing loss were concerned.

HYPOTHESES

The major hypotheses tested in this study are stated in the null form as follows:

1. Profoundly deaf children who have utilized the Visible English communication methodology in the Louisiana State School for the Deaf will show no significant differences in read language ability from profoundly deaf children who have utilized the Oral and Simultaneous communication methodology in the Tennessee School for the Deaf.

2. Profoundly deaf children who have utilized the Visible English communication methodology in the Louisiana State School for the Deaf will show no significant differences in written language ability from profoundly deaf children who have utilized the Oral and Simultaneous communication methodology in the Tennessee School for the Deaf. More specifically, it is hypothesized that there will be no significant differences in:

(*a*) productivity, the length of the expression,

(*b*) abstract-concrete, the nature and meaning of the ideas expressed,

(*c*) syntax, the correctness of what is expressed (i.e., additions, omissions, substitution of words, word endings or punctuation, and word order.)

3. Profoundly deaf children who have utilized the Visible English communication methodology in the Louisiana State School for the Deaf will show no significant differences in ability to use grammatically correct spoken and/or manually spelled expressive language in a direct communication situation from profoundly deaf children who have utilized the Oral and Simultaneous communication methodology in the Tennessee School for the Deaf.

Analysis of Read Language Ability

The first hypothesis tested in this study stated that profoundly deaf children who have utilized the Visible English communication methodology in the Louisiana State School for the Deaf will show no significant differences in read language ability from profoundly deaf children who have utilized the Oral and Simultaneous communication methodology in the Tennessee School for the Deaf.

For lack of a better measuring instrument, the Stanford Achievement Test, Form X Intermediate I and Intermediate II, word meaning and paragraph meaning sections, was given to all four groups to measure ability to read language.

The following means were obtained from scores for Word Meaning and Paragraph Meaning:

Word meaning, raw score:	
12- and 13-year-olds	Visible English, 10.30. Oral-simultaneous, 8.96.
14- and 15-year-olds	Visible English, 13.39. Oral-simultaneous, 15.65.
Paragraph meaning, raw score:	
12- and 13-year-olds	Visible English, 19.70. Oral-simultaneous, 20.65.
14- and 15-year-olds	Visible English, 21.17. Oral simultaneous, 20.61.

A two-factor analysis of variance was performed, with results shown in Table 1.

TABLE 1.—ANALYSIS OF VARIANCE FOR READING ABILITY

Source	df	Mean squares	F value	Level of significance
Word meaning, raw scores:				
Method	1	4.79	0.21	NS
Age	1	550.27	24.40	0.0001
Method by age	1	74.88	3.32	.0683
Error	88	22.55		
Corrected total	91			
Paragraph meaning, raw scores:				
Method	1	.88	.03	NS
Age	1	11.84	.35	NS
Method by age	1	13.32	.39	NS
Error	88	34.31		
Corrected total	91			

F values of 0.21 for Word Meaning and 0.03 for Paragraph Meaning indicated that there were no significant differences in read language ability of the groups due to method. However, an F-value of 3.32 for the interaction of method by age with a probability of .0683 for Word Meaning is approching significance (i.e, $p<.10$). The interaction suggests there might be an effect due to method, but this effect appears to be different for different ages, as indicated by the above means. It appears that Visible English might be a better method for the 12- and 13-year-olds, but not for the 14- and 15-year-olds. There was no interaction in the analysis of Paragraph Meaning.

There were highly significant differences ($p<.0001$) according to age on Word Meaning. There were no differences according to age on Paragraph Meaning.

Since there were no significant differences in read language ability according to method, hypothesis one was not rejected.

It is difficult for the investigator to account with assurance for the fact that there were no significant differences between the groups in read language ability as tested by the Stanford Achievement Test. As will be shown, these Visible English children were superior in ability to use written language. Myklebust has stated that written language is the last symbol system acquired and might be viewed as man's highest level of verbal behavior (Myklebust, 1964). It should follow that children who have the greater facility with written language should also have the greater facility with read language.

It may be that the sections of the Stanford Achievement Test used in this study are not accurate measures of read language ability. For example, one 13-year-old was observed to be responding as if she were guessing and even though the teacher reported that this girl could not read, she scored at grade 3.5. A better test of read language ability might be devised for research purposes.

One can only speculate as to why there were no differences in read language ability. In the past it often has been impossible to find teachers certified in the education of the deaf. It might be assumed the ability to read is acquired only through certain instructional methods that were not present for the Visible English children. There is a need for further study of this aspect of the teaching of reading to these deaf children.

Analysis of Written Language Ability

According to Hypothesis 2, profoundly deaf children who have utilized the Visible English communication methodology in the Louisiana State School for the Deaf will show no significant differences in written language ability from profoundly deaf children who have utilized the Oral and Simultaneous communication methodology in the Tennessee School for the Deaf.

(*a*) There will be no significant differences in productivity, the length of the expression.

(*b*) There will be no significant differences in abstract-concrete, the nature and meaning of ideas expressed.

(*c*) There will be no significant differences in syntax, the correctness of what is expressed.

(1) There will be no significant differences in additions, omissions, substitutions of words, word endings or punctuation.

(2) There will be no significant differences in word order.

Productivity

The Myklebust Picture Story Language Test was used to assess ability of all subjects to use written language. This test is used as a diagnostic instrument, to measure syntax, morphology, vocabulary, and punctuation. It has been standardized on deaf children and has been useful in identifying "deafisms" in written language and ". . . in revealing growth in written language that occurs as a result of educational training (Myklebust, 1965, p. 75)". This test gives a measure of productivity, the length of expression of abstract-concrete, the nature and meaning of ideas expressed, and of syntax, the correctness of what is expressed. Table 2 demonstrates the result of this test of productivity, which is evaluated in Total Words, Total Sentences, and Words Per Sentence.

An analysis of variance revealed there were no significant differences between the groups, nor between the ages, in *Total Words*. The means are as follows for the four groups:

12- and 13-year-olds	**Visible English, 131.4.** **Oral-simultaneous, 106.8.**
14- and 15-year-olds	**Visible English, 96.4.** **Oral-simultaneous, 107.1.**

It should be noted that the younger children who had utilized Visible English used 35.0 more words than did the older Visible English children and 24.6 and 24.3 more words than the two groups of Oral-Simultaneous children. The difference between the mean for these younger Visible English children and the mean for hearing children as reported by Myklebust was only 18.3, as compared with a difference of 71.7 for the 13-year-olds which Myklebust tested. The present investigator cannot explain this greater facility of the younger Visible English children, except to state that these children were more like hearing children in Total Words. The older Visible English children showed the decrement that hearing children exhibited at age 15. The Oral-Simultaneous children did not show the decrement but evidenced a plateauing effect.

TABLE 2.—ANALYSIS OF VARIANCE FOR PRODUCTIVITY

Source	df	Mean squares	F value	Level of significance
Total words:				
Method	1	1,092.27	0.30	NS
Age	1	6,904.45	1.90	NS
Method by age	1	7,184.45	1.98	NS
Error	88	3,627.22		
Total	91			
Total sentences:				
Method	1	13.32	.21	NS
Age	1	465.75	7.48	.0075
Method by age	1	115.32	1.85	NS
Error	88	62.30		
Total	91			
Words per sentence:				
Method	1	19.91	5.26	.0228
Age	1	35.32	9.32	.0033
Method by age	1	.73	.19	NS
Error	88	3.79		
Total	91			

There were no significant differences between ages nor was there any interaction with regard to Total Words.

An analysis of variance revealed that on *Total Sentences* there were no significant differences between the children who had utilized the Visible English method and those who had utilized the Oral and Simultaneous method. There were significant differences between ages ($p < .0075$), with the younger group having more sentences than the older, as shown by the following means:

12- and 13-year-olds	Visible English, 17.91. Oral-simultaneous, 16.43.
14- and 15-year-olds	Visible English, 11.17. Oral-simultaneous, 14.17.

There was no interaction on the analysis of Total Sentences.

On *Words Per Sentence*, there were significant differences between the two methods and between ages ($p < .02$ and $p < .003$) with means as follows:

12- and 13-year-olds	Visible English, 7.32. Oral-simultaneous, 66.57.
14- and 15-year-olds	Visible English, 8.74. Oral-simultaneous, 7.63.

There was no interaction in the analysis of Words Per Sentence, which indicates that the variables method and age were independent of each other and that the effects obtained were probably due to method and to age.

In analyzing the results of the tests of productivity, it is necessary to note the error term, or the measure of variation among the subjects for each measure. Since Words Per Sentence is derived by dividing Total Words by Total Sentences, in order that differences in Words Per Sentence be apparent, there must be differences in one or the other or both of these measures. The error term is 3627.22 for Total Words, 62.30 for Total Sentences, and only 3.79 for Words Per Sentence. Since the error term, or variability, has been reduced proportionately more in Words Per Sentence, this is a more efficient measure of productivity. Differences are found here, indicating that differences do exist in Total Words and/or Total Sentences.

Myklebust considers this test one of the most stable and revealing of the written language tests since there is an even growth in normal children from seven through 17, with increments of between two and three words for each two-year interval (Myklebust, 1965). It should be noted that both groups of children were considerably deficient in Words Per Sentence when compared with hearing children.

The hypothesis of no difference in productivity, the length of the expression, is rejected. There were significant differences in Words Per Sentence. Children who had utilized Visible English were superior to those who had utilized the Oral-Simultaneous method. The younger Visible English children had .75 more Words Per Sentence than did the younger Oral-Simultaneous children and the older Visible English children had 1.11 more Words Per Sentence than did the older Oral-Simultaneous children.

Abstract-concrete

The second sub-hypothesis under written language ability to be tested was that there will be no significant differences in abstract-concrete, the nature and meaning of ideas expressed. The Abstract-Concrete Scale provides a measure of the extent to which imagination and conceptualization are used in writing a story. The continuum of five levels by which the composition is judged shows the amount of progress in moving from the concrete where the child is "stimulus bound" to levels of abstraction where a plot and imagination are used.

The following means were obtained for all four groups on the Abstract-Concrete Scale:

12- and 13-year-olds	Visible English, 14.22. Oral-simultaneous, 9.74.
14- and 15-year-olds	Visible English, 13.70. Oral-simultaneous, 12.96.

Table 3 shows the results of an analysis of variance for the Abstract-Concrete Scale. There were highly significant differences between methods in the use of abstraction. The means show the direction of the difference is in favor of the Visible English children.

There were no significant differences between ages.

An F value of 3.36 with a probability of .0669 approaches significance for interaction. Two facts revealed by the means might explain this interaction: (1) there are differences in favor of the Visible English children in both age groups, but the difference between the 12- to 13-year-olds is more pronounced than that between the 14- to 15-year-old groups, and (2) the younger Visible English children use abstraction to a greater degree than the older, but this is not the case with the Oral-Simultaneous children.

TABLE 3.—ANALYSIS OF VARIANCE FOR ABSTRACT-CONCRETE

Source	df	Mean squares	F value	Level of significance
Method	1	156.52	6.53	0.0118
Age	1	41.78	1.74	NS
Method by age	1	80.39	3.36	.0669
Error	88	23.96		
Corrected total	91			

Myklebust's means for hearing children were 16.7 for 13-year-olds and 18.4 for 15-year-olds (Myklebust, 1964, p. 304). The younger Visible English children were under normal levels by only 2.5 points, while the older Visible English children were behind by 4.7 points and the two groups of Oral-Simultaneous children were behind 6.96 and 5.44 points when compared with hearing children. Myklebust states that most differences on this scale are slight from one age level to the next. He states that deviations of less than two years without other evidence usually should be considered as falling within the average range (Myklebust, 1965, p. 183). According to this interpretation the Visible English 12- and 13-year-olds, with a mean of 14.22, could be considered close to normal.

There were highly significant differences ($p<.01$) between the two methods in favor of the Visible English group, therefore the null hypothesis is rejected. Apparently children taught by the Visible English methodology develop greater abstraction ability than those taught by the Oral-Simultaneous method.

Syntax

The next sub-hypothesis to be tested was that there will be no significant differences in syntax, the correctness of what is expressed; there will be no significant differences in additions, omissions, substitutions of words, word endings and punctuation, nor in word order.

The following means were obtained for each group from a test of syntax. The means for syntax quotient and for each category of errors are given. It should be noted that a higher syntax quotient indicates superiority, but the other means are presented in terms of errors, so fewer errors indicate superiority.

	Syntax quotient	Omissions	Substitutions	Addition errors
12- and 13-year-olds:				
Visible English	80. 39	11. 98	80. 83	3. 83
Oral-simultaneous	67. 87	18. 27	123. 76	7. 81
14- and 15-year olds:				
Visible English	82. 30	6. 58	63. 57	3. 82
Oral-simultaneous	73. 65	11. 01	97. 87	6. 95

Table 4 shows an analysis of variance for syntax, with all errors and syntax quotient listed.

Syntax quotient

An F value of 19.42 (Table 4) indicates that there were highly significant differences in the syntax quotients of the Visible English and Oral-Simultaneous children. The means for syntax quotient reveal that the Visible English children were superior, with even the 12–13-year-olds superior to both groups of Oral-Simultaneous children.

In the analysis of variance there were no significant differences between age groups. There was no interaction.

The hypothesis of no differences in syntax is rejected.

TABLE 4.—ANALYSIS OF VARIANCE FOR SYNTAX

Source	df	Mean squares	F value	Level of significance
Additions:				
Method	1	289. 15	7. 14	0. 0088
Age	1	4. 39	. 11	N.S.
Method by age	1	4. 05	. 10	N.S.
Error	88	40. 49		
Corrected total	91			
Omissions:				
Method	1	661. 00	6. 05	. 0151
Age	1	921. 71	8. 43	. 0049
Method by age	1	19. 73	. 18	N.S.
Error	88	109. 33		
Corrected total	91			
Substitutions:				
Method	1	34, 296. 11	7. 26	. 0083
Age	1	1, 0707. 13	2. 27	N.S.
Method by age	1	427. 42	. 09	N.S.
Error	88	4, 724. 65		
Corrected total	91			
Word order:				
Method	1	39. 13	3. 36	. 0668
Age	1	108. 70	9. 32	. 0033
Method by age	1	4. 35	. 37	N.S.
Error	88	11. 66		
Corrected total	91			
Syntax quotient:				
Method	1	2, 577. 92	19. 42	. 0001
Age	1	340. 53	2. 57	N.S.
Method by age	1	86. 10	. 65	N.S.
Error	88	132. 73		
Corrected total	91			

Additions, omissions, substitutions

The Visible English children had means of 3.84 and 3.83 as compared with the Oral-Simultaneous children's means of 7.81 and 6.95 for errors of additions as indicated in Table 4. In errors of omissions, the Visible English children had means of 11.98 and 6.58 as compared with 18.27 and 11.01 for the Oral-Simultaneous children. The Visible English children had means of 80.83 and 63.57 in errors of substitutions, as compared with means of 123.76 and 97.87 for the Oral-Simultaneous children. In each case, the children who had utilized Visible English had fewer errors in each category listed.

In Table 4 F values of 7.14, 6.05 and 7.26 for additions, omissions, and substitutions respectively can be found, indicating highly significant differences between methods in all three of these errors. There were highly significant differences between ages for omissions only. There was no interaction of age by method.

The hypothesis of no differences is rejected.

Word order

The means for word order errors were 2.22 and 0.48 for the Visible English children as compared with means of 3.96 and 1.35 for the Oral-Simultaneous children.

Word order:	
12- and 13-year-olds	Visible English, 2.22. Oral-simultaneous, 3.96.
14- and 15-year-olds	Visible English, 0.48. Oral-simultaneous, 1.35.

Although the means for the Visible English children indicated fewer errors, an analysis of variance for Word Order yielded an F value of 3.36 for method, indicating no significant differences. There were highly significant differences between ages in Word Order, as might be expected. There was no interaction.

The hypothesis of no differences between the two methods in Word Order was not rejected; however, the level of probability was .0668 ($p<.10$), which approaches significance.

Since the children who used the Visible English method were consistently significantly superior in syntax, the hypothesis of no differences in written language is rejected. It can be concluded that Visible English, where every word is visually perceptible in English word order, is a better method for helping the deaf child develop syntax than is the Oral-Simultaneous communication methodology.

ANALYSIS OF EXPRESSIVE LANGUAGE IN DIRECT COMMUNICATION SITUATION

Hypothesis 3 states that profoundly deaf children who have utilized the Visible English communication methodology in the Louisiana State School for the Deaf will show no significant differences in ability to use grammatically correct spoken and/or manually spelled expressive language in a direct communication situation from profoundly deaf children who have utilized the Oral and Simultaneous communication methodology in the Tennessee School for the Deaf.

The Grammatic Closure Section of the Illinois Test of Psycholinguistic Abilities was used to determine the ability of all four groups to use grammatically correct expressive language. "Diagnostically, this subtest indicates the extent to which a child has successfully picked up the linguistic redundancies to which he has been exposed (Bateman, 1968, p. 10)." It assesses the child's ability to use these redundancies in acquiring automatic habits for handling syntax and grammatic inflections. The test measures the form and not content of a missing word which the child is expected to supply, and consequently gives a measure of morphology and inflectional forms which might not be obtained from the written samples where choice of what to write is left to the subject (Kirk, McCarthy, and Kirk, 1968, p. 11).

This test yielded the following means for each group:

Grammatic closure:	
12- and 13-year-olds	Visible English, 13.25. Oral-simultaneous, 7.65.
14- and 15-year-olds	Visible English, 16.30. Oral-simultaneous 11.17.

Table 5 shows a two-factor analysis of variance used to test for differences.

There were highly significant differences ($p < .0001$) between children employing the different methods. Means of 13.26 and 16.30 for the Visible English children as compared with means of 7.65 and 11.17 for the Oral-Simultaneous children indicate that the children utilizing the Visible English methodology were superior in grammatical usage. It should be noted that the Visible English 12- to 13-year-olds were even superior to the Oral-Simultaneous 14- to 15-year-olds.

There were significant differences between ages.

There was no interaction effect.

Hypothesis 3 was rejected, leading to the conclusion that children who utilize Visible English are better able to communicate in language which is grammatically correct than are children who have utilized the Oral-Simultaneous method. It is suggested that Visible English provides more adequate exposure to the redundancies of language and therefore is a better communication methodology for developing language.

TABLE 5.—ANALYSIS OF VARIANCE FOR GRAMMATIC CLOSURE

Source	df	Mean squares	F value	Level of significance
Method	1	663.14	23.90	0.0001
Age	1	247.84	8.93	.0039
Method by age	1	1.32	.05	N.S.
Error	88	27.75		
Corrected total	91			

Importance of the Results

This study appears to be of importance to the field of education of the deaf in that it provides objective information in the area of communication methodology. For almost two hundred years a controversy regarding method of communication has raged in the field (Klopping, 1971, p. 16) with very little research (Myklebust, 1964; Quigley, 1969) and much emotionality. The current study is a step in the direction of reversing this situation by providing an objective scrutiny of methods. It is hoped that additional studies of methodology in other areas of the academic programs of schools for the deaf will be undertaken.

This doctoral dissertation at the University of Arizona was preceded by a doctoral study (Klopping, 1971) in which the finding was made that "... almost one-third of the subjects did not understand language at an adequate level under any of the methods of communication (Klopping, 1971, pp. 59–60)." While Klopping's subjects had utilized the Simultaneous Method at the Arizona State School for the Deaf, the present study compared that method with Visible English. Because of the inadequate academic achievement of deaf children and because of the paucity of adequate research concerning communication methodology, this study in its objective comparison of Visible English and the Oral-Simultaneous method makes a contribution to the field of education of the deaf.

This study appears to be pertinent in that it indicates that the written and spoken language level of the deaf child can be improved when the child is allowed to see connected language. The study provides an unbiased evaluation of the Visible English Method which has been in operation for a group of children for approximately eight years and it presents evidence of the value of the continuation of that method.

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TAKING ENGLISH TO PARENTS AND PRESCHOOLERS

Mildred Alexander, supervising teacher, Parent-Pupil Education Program, Louisiana School for the Deaf, Baton Rouge. (Illustrated with Slides)

I would like to read to you a sentence that I found on the page called *Sense and Nonsense* in the April issue of the Boardman. "An expert doesn't necessarily know more than you, but he has it better organized and he uses slides." I don't know about being better organized, but I do have some slides.

At the Louisiana State School for the Deaf, we have completed four years in the Parent-Pupil Education Program. As part of this program, we have three teachers who travel over the state and work with young deaf children and their parents in their homes. From Monday until Thursday, two of these teachers live in Winnebago campers which we call mobile units. (Slide 1) The third teacher travels in a station wagon and stays at motels. (Slide 2) There are several advantages in using the mobile unit. (1) It serves as a classroom. When the little deaf child "rules the roost" at home, it is better to work with him in the mobile unit until we establish rapport. (2) It affords a place for the teacher to wash and disinfect materials being used by more than one child. (This is Miss Thelma Baudoin and the unit she uses.)

We try to plan an individualized program for each child and his particular set of parents. If a child has enough hearing that he can repeat words, then phrases, then sentences, he can learn language by using the auditory channel. If he is profoundly deaf, then he must see the language that he is expected to learn. (Slide 3) So we begin to teach the mother how to spell some basic words, such as Eat, Water. Yes, No, Come, Wash, Sleep, Ball, Doll, I love you, We will go. Our goal is to have the parents spell everything they say, as they say it. But before parents can spell complete sentences, while they are still doing one word at the time, the child sees that there is a set of symbols for everything we do.

Children do not have to be "old enough to spell" to learn language from this method. One set of parents started using fingerspelling with speech when their child was eighteen months old. When he was two years old, the parents came to visit the school. The child was playing with some toys in the preschool classroom while the parents talked to our coordinating teacher. When the parents started to leave, the Daddy said, "Come." The response he got was a slight shake of the child's head. This was repeated, then the father went to the child and gave him a swat on the seat of his pants. The child raised his little hand to form perfectly the letters for "OW!" About a month before this child's fourth birthday, the teacher went to his home for a visit. The mother said and spelled, "Do you want to show Mrs. Alexander the sword and shield that I made for your wall?" The child nodded, went to his room, and returned with the objects mentioned. Mrs. Alexander said, "I am afraid." So the child pretended that he would hit her with the sword. The mother said, "Oh, not Mrs. Alexander! Kill a dragon!" The child looked around the room, evidently to try to find out what she meant. The mother said, "Maybe I should not have used the word *dragon*." But isn't this the way hearing children learn language?

(Slide 4.) Here Miss Baudoin is telling a simple story about a rabbit, a boy, and a girl. The child may not understand every word (hearing children don't always understand every word, either) but from the pictures, the action, everything together, the child gets meaning and the feeling that he understands the language. Because he has this feeling, he attends, and his language grows.

(Slide 5.) The mother has her turn to read the book with her child. These books are prepared by the staff and are adaptable to each situation. We color each book to represent the child, his clothes, and his family so that it becomes a personalized copy to be left in his home.

(Slide 6.) Not every young child is interested in books. Here is an example of the staff's work to build an interest. Large posters were made of this story.

(Slide 7.) The mother and siblings participated in telling the story with the posters. We don't like to take anything into the home that we cannot give the child to keep for his own, but in a case like this we leave just the book, after the child's interest is kindled through the use of the posters.

(Slide 8.) The deaf child will learn language by overseeing it, just as the hearing child learns by overhearing, so parents should spell and talk about the natural situations that occur at home. In addition to this, books are planned with controlled vocabulary to include necessary repetition and to give the child words to express feelings of anger, sadness, happiness, and surprise. (Slide 9.)

Three- and four-year-old deaf children learn that people are WHO things and that everybody has a name. (Slide 10.) Here the mother is spelling the word Ken as she gives Rowdy the printed form which he (Slide 11) matches to his brother's picture. Deaf children are more interested in learning to read early because they have a need and depend upon reading to help them learn about things around them.

(Slide 12.) We would like to begin working with a mother as soon as she discovers that her child cannot hear.

(Slide 13.) This child is thirteen months old—old enough to see herself separate from the mother and to become interested in objects around her. (Slide 14.) The mother has six children; three are deaf. (Slide 15.) Parents feel better about the problems of deafness when they see the child can learn language from them.

(Slide 16.) Every child is different—Every parent is different. These children are twins and the little girl is deaf. The feelings of the parents have to be dealt with before much can be accomplished for the child. (Slide 17.) We try to provide opportunities for children to develop skills and become accustomed to using different materials. (Slide 18.) Here the mother is spelling and saying the word "cut". When the mother attempted to correct the formation for the letter 'u', (Slide 19) the younger hearing sibling joined in. These children will never be able to remember the time that they could not use Visible English (fingerspelling with speech) with their deaf brothers or sisters. One mother agreed that this was true and gave us an example. Her four-year-old became restless in church one Sunday morning and when the mother frowned her disapproval, the child formed the word "eat". It seemed that the sermon was longer than usual, and she was ready for lunch!

(Slide 20.) Here is a young mother whose constant, "No, No," to her child might have been the result of her family situation—living too near disapproving in-laws who were unhappy with the child's deafness. Though he is only two, Miss Baudoin noticed that he attempted to imitate the "No, No, No." We realize that the parent's conscience substitutes for the child's until the child is able to form a conscience of his own. The parent has to decide what is really important, and then be consistent. Miss Baudoin explained that the mother might want to teach "on" and "off" when the child manipulated the light switch and save "No, no" (Slide 21) for times when she really wanted to use it, as in this case when she did not want him to eat the jelly beans he had spilled. I know you are thinking he isn't looking. One mother said that she spelled to the back of her child's head for a year—then he caught on and demanded that she give him language for every situation.

(Slide 27.) He is looking here as Mother tells a story and (Slide 23) he tries to imitate the word "pop".

(Slide 24.) Teachers in the Parent-Pupil Education Program show friends and neighbors how to fingerspell. The deaf child is accepted in his community if his neighbors know how to communicate with him and if they understand a little about what it means to be deaf. This child is a hearing neighbor who watches for the mobile unit as eagerly as the deaf child does. She comes over and participates in all the activities. Here they are marching with a card which has the word "March" under a picture. "March" is not important, but seeing that there is an appropriate response that can be consistently given to the printed form is an important step in understanding language. (Slide 25.) Here the girls are playing "Little Miss Muffet." (Slide 26). They enjoyed taking turns. Being able to dramatize, or recreate the events, is necessary for reading comprehension. (Slide 27.) This child is putting pictures in sequence, paving the way for orderly thinking and paragraph development.

(Slide 28.) After the child learns that people have names, we label objects in the home so that he can see that everything has a name. Once started, the teacher can hardly write fast enough to keep up with the child as he goes over the house asking for the names for family possessions.

(Slide 29.) Sometimes parents ask for help with a particular situation. For example, "What shall I do in the grocery store when he screams for things I do not want him to have?" As in all matters of discipline, planning ahead and giving the child the language for the situation works wonders. Mrs. Wilson prepared some booklets about going to the store; one for a boy—one for a girl, with a place for the child's own name and the names of the items he will be permitted to put in the grocery cart. Proper preparation ahead of time insures proper behavior.

(Slide 30.) Ideally, parents should spell everything they say to the deaf child, but some parents need little props to remind them to do this. We have picture cards with sentences for many of the everyday happenings. Here the mother holds the card: *We will go*, as she uses Visible English with it. (Slide 31.) Siblings can be a great help in teaching language. This girl is spelling the same sentence as her mother did. (Slide 32.) Here the child is matching sentence strips to the pictures. She learns that the things we spell and say can be represented by the printed form. With Visible English, she will learn the same language that she will be expected to read and write.

(Slide 33.) We have tried to use some things to help develop a good self concept. Mrs. Wilson uses these materials in the preschool classroom and, if the children are interested in them, we use them in the homes. Angela has just completed the task of dressing the paper doll marked *Angela* the same way that she is dressed, while the child in the background is choosing word cards for the sentence about himself. (Slide 34.) James is looking for some pants just like his—I left this material with one parent and when I went back her five and a half year old made the sentence, "I have on some blue pants." When he finished, I turned all the cards over so he could not see them and he spelled the whole sentence without error. I never expect him to say as some older deaf people have said to me, "I have a poor memory." We are developing his visual and kinesthetic memory to support whatever auditory memory he has to help him learn English during his language acquisition years. Another important thing is that his parents are so pleased with him!

(Slide 35.) We made a little booklet with some things about the deaf child—his name, a place for his handprint, his footprint, and a place for his weight. Now, I know he doesn't understand what weight means, but neither does a hearing child. (Slide 36.) He just knows that Mama is pleased about it.

(Slide 37.) Some children do not have parents. This child lives with her grandmother who does very little for her in the way of language. However, the child looks forward to visits with the PPEP teacher. There are some things she can do for herself with the materials left by the teacher; many of these children have learned to spell words, sentences, and complete books for themselves.

(Slide 38.) Some parents have no education. Sometimes older siblings help. (Slide 39.) Here an aunt and a cousin living in the same house wanted time to comb this child's hair before we made a picture for her name card.

One French speaking mother who could not read, learned to read as she learned to spell words on the hand. She helped her child and was very proud of her accomplishment.

(Slide 40.) In areas where there are several parents, meetings are held, sometimes in the preschool classroom, to give parents an opportunity to practice the use of Visible English and to discuss some of the problems connected with deafness. (Slide 41.) This slide shows a mother talking to her child at the close of the meeting.

(Slide 42.) A very important part of the PPEP is preparation for entering school. This child is spelling to his hearing brother the sentence written about going from home to school. Our staff prepared a booklet which gives the child the language for each step involved. Having the mother read this booklet again and again before time to go, provides the child an opportunity to deal with his feelings through anticipatory anxiety. (Slide 43.) Because we have a page in the booklet showing the parents putting the luggage in the trunk of the car, one child refused to let the parent put his bag on the back seat. This shows that this preparation is meaningful and, we have noticed an appreciable decrease in the amount of anxiety exhibited by the child when his parents leave him at school. (Slide 44.) Parents are encouraged to make at least one visit to the school before the child enters.

(Slide 45.) Student workers from Louisiana State University help prepare materials for our five preschool classes over the state and to be used with parents in the home.

(Slide 46.) This is the preschool class, first begun on the Baton Rouge campus. As we acquire new ideas and new materials, we use them with these children to help us evaluate the procedures and materials devised.

It has been our experience that parents of the young deaf child can understand and accept the problems connected with deafness and recognize the potential their child has. An individualized program can be planned for each deaf child which will enable him to learn the English language. As the deaf child learns language, he is able to alter his behaviour and become an acceptable member of the family group.

THE DEVELOPMENT OF THE SELF-CONCEPT

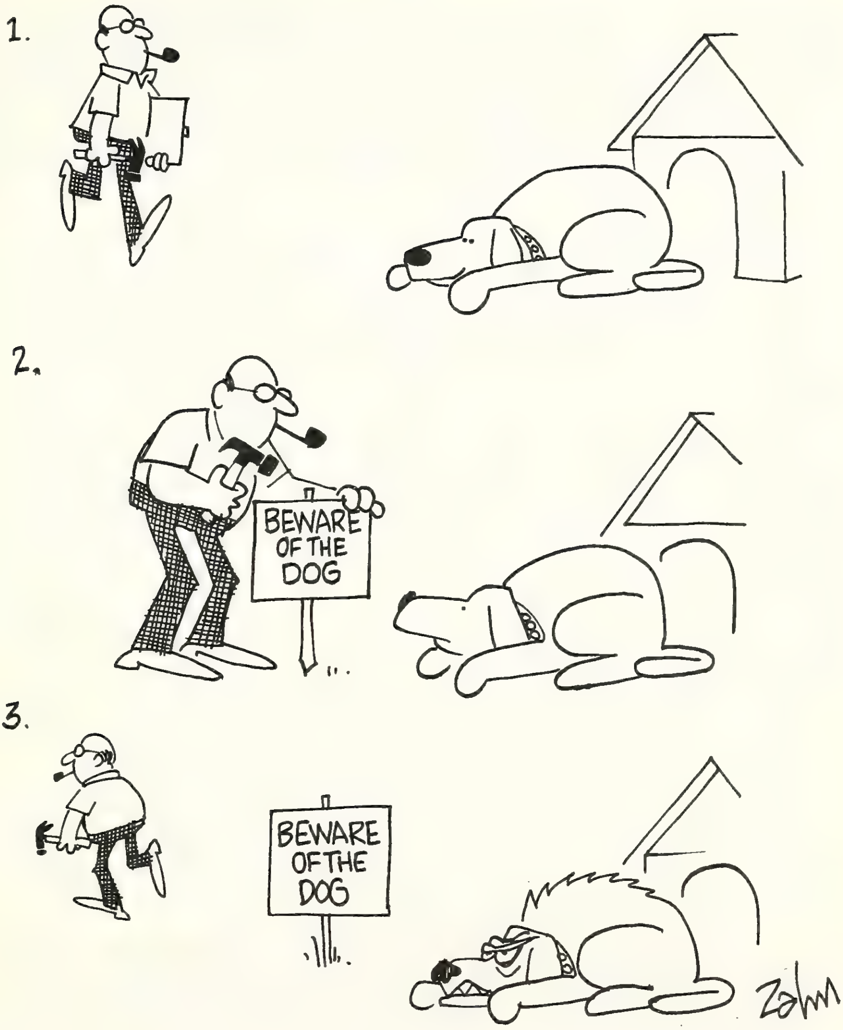
Mildred Alexander, supervising teacher, Parent-Pupil Education program, Louisiana State School for the Deaf, Baton Rouge

I did a great deal of reading and looking into the literature to find out about the self concept and how it is developed. When we checked in Sunday afternoon, my roommate bought the July/August, '73 issue of "The Saturday Evening Post" and we found something that explains the whole thing and would have saved me all the trouble that I had, if I had seen it sooner.

(1) First, there is the individual.

(2) Secondly, he reacts to his experiences.

(3) Thirdly, the self concept develops because of these experiences.



What is the self-concept?

Is there something about a person that summarizes all that he is and serves as a supramoderator of his functioning? Is there some type of vital and relevant data about a person that supercedes other things in importance to the individual and thereby expresses his true *raison d'etre*? A basic hypothesis of the research program at the Dede Wallace Center in Nashville, Tennessee is that the self concept fulfills such a function. (FiHs, 1972).

Behavioral scientists have come to view the self concept as a kind of central construct behavior. Self theory is based upon the principle that man reacts to his phenomenal world in terms of the way he perceives this world. The most outstanding part of each person's phenomenal world is his own self—the self as seen, perceived, and experienced by him. This perceived self is the individual's self concept. Man is not always aware of his absolute, true, or actual self, but only of his own concepts and perceptions of himself. The self concept, or self image, is learned by each person through his lifetime of experiences with himself, with other people, and with the realities of the external world.

Is the self-concept important?

Dr. William H. Fitts has published several monographs describing the research based on the hypothesis that the self concept is a significant variable in all human behavior.

A general hypothesis is stated: Other things being equal, the more optimal the self concept, the more effectively the individual will function.

The self concept has some slight relationship to academic achievement. The relationship may be critical if intellectual resources or educational background are borderline. Since the deaf child has a background of language deprivation, this could apply to him. Otherwise, the self concept seems to be more closely related to the noncognitive aspects of behavior within the academic setting such as school morale and classroom participation. Literally hundreds of studies have been made concerning the self concept. It would be impossible to give even a summary. Some of the things reported in the monographs from the Dede Wallace Center are as follows:

1. There are indications that the individuals who have undergone certain kinds of experiences and who have specific types of backgrounds show distinctive self concept patterns.
2. Investigations with sixth grade boys and girls demonstrated that those with more positive self concepts showed less anxiety and greater coping strengths in handling a stress-inducing experimental situation. There is considerable evidence that the kind of self concept which a person takes into any situation affects the way he deals with that situation.
3. The individual's self concept partially predicts the caliber of job performance; the self concept, in turn, appears to be affected by the nature and quality of the work performed.
4. The person who is rated high in personal effectiveness is likely to have an optimal self concept.
5. Individuals with healthy self concepts are more active in behaviors which involve expressing affection, inclusion, and control toward others than they are in seeking these behaviors from others. Findings indicate that good interpersonal communication is associated with a well-integrated self concept.
6. One study of teacher aids showed that those with more positive self concepts tended to engage in more varied and responsible activities.
7. High school students who participated in an inappropriate and unwanted academic program showed self concept scores which deteriorated over a four-month period.
8. Persons with negative self concepts show higher dropout and failure rates than those with positive self concepts.

The findings about good and poor self concepts remind me of something I read concerning the gas shortage. Experiments determined that large cars use more gasoline than do small cars. Nobody is surprised when individuals with good self concepts do better than those who have poor self concepts.

When is the self-concept developed?

Jersild (1968:4) says that three significant steps in the development of a personality are (1) conception, (2) the process of being born and (3) the development of selfhood, involving all the experiences through which each of us becomes aware of his existence as a person, distinct from all others.

When does the child become aware of himself as a distinct individual? Ames estimated that sometimes during the first year the infant "discovers himself" and "finds a place in, yet apart from the outside world." (Jersild, 1968 : 165) This doesn't happen all at once. The child comprehends different aspects of what he eventually calls himself with varying degrees of clarity at different times.

Fitts (1971 : 37) states that it is clear that by the earliest ages at which the Tennessee Self Concept Scale is applicable (11 or 12) the self concept is already a relatively stable entity and is not readily changed. The process of self-discovery in a healthy person continues as long as he lives.

What are the factors that influence the child's view of himself?

Several studies have been reported which indicate that parents exert a powerful influence on the formation of a child's self concept (Fitts, 1971). Jersild says that a growing person's view of himself is shaped by everything that affects the sweep of his development, ranging from his genetic makeup to obvious and subtle social influences in the society in which he lives. One widely accepted theory pertaining to the development of the self is that a child's self evaluation is profoundly influenced by "significant" persons, particularly his parents. This view has been especially emphasized by Harry Stack Sullivan, who claimed that a young child's "self system" comes into being through a process of "reflected appraisals." As a child is appraised by "significant others," so he in time appraises himself. (Jersild, 1968 : 172).

How do the deaf child's parents appraise him? He must interpret the world through sight. What does he see? Does he see a mother who frowns when she looks at him and cries when she holds him? Does he see two worried individuals who drag him from place to place for reasons he does not understand? Levine described this period of trying to find out what is wrong as "filled with strange and threatening white-coated figures, terrifying instruments, and much fearsome poking and prying."

Does the deaf child decide that something terrible is wrong and that he seems to be the cause of it? Does he feel the parents' disapproval of the whole situation? Approval by others who are significant in his life, especially his mother, instills the beginnings of self approval and disapproval by significant persons leads to self-disapproval. (Jersild, 1968 : 172).

Self disapproval leads to low self esteem.

And everywhere we run into the problem of language. It's not just that the deaf child does not have the language to express himself.

There are other questions that arise. Do the parents appraise him differently because he cannot talk? Do their friends across the street have a baby the same age who is saying "everything?" The staff of the Parent-Pupil Education Program administered a questionnaire to the hearing parents of thirty deaf children and thirty hearing children. There were significant differences to show that hearing parents perceive their deaf children in a more negative way than hearing parents do their hearing children.

What about the baby himself? Is he really different because his world is different? We find a description of the deaf baby's world given by Levine: "It is a world of stillness, too. The babe born deaf hears nothing of the warmth of mother sounds that spell love and comfort and tell him that he is not alone. He is deaf to them all. The sounds of fun and frolic are stilled, too; the laughter, the clapping hands, the squeaky toys and rattles. All is still and quiet. In many cases, the infant cannot even hear the sounds his own voice makes. This is as strange and cold a baby world as one could imagine, without any really meaningful sound to stimulate feeling or give added meaning to what is seen."

I was baby sitting for my sister the day before my nephew's fourth birthday. In the tone that grandmothers use, I said to him, "I remember when you were born. I went down to the hospital to see what a fine baby your mama and daddy had and there was your daddy by the telephone with a handful of nickels, calling everybody he knew to tell them that he had a baby boy!" The next day his mother began to talk to him about how happy they were when he was born. He repeated to her what I had said about his daddy, then in a most satisfied tone, he said, "I remember that." It is the good feeling his parents had given him over his four-year life span that he remembered. Is the deaf child different because he misses hearing this kind of thing? Does he feel that his parents value him as a worthy individual? When he begins to get language, does anybody ever tell him about the kind of baby he was and how happy his parents were to have him?

What can be done?

Jersild (1968: 180) states that an aim in some of the current programs designed to forestall or to remedy self-defeating attitudes is to provide experiences at the preschool level that might help a child to view himself as one who can achieve and as one whose achievement is worthy of notice.

The first thing that we should do to help the deaf child is to counsel his parents. Levine states that "If from the child's point of view, they (the parents) have been something of an enigma to him, then from the parent's point of view, the child is frequently even more of an enigma to them. For in many cases, although aware that something is surely wrong, they are far from suspecting what that something really is." With proper counseling parents can come to understand and accept the problems connected with rearing a deaf child. They can recognize the child's potential as well as his limitations and learn to show their pleasure in him and his accomplishments even if these are different from the ideas the parents had before the child was born. In the survey that we did, we found that the parent's perception of his child changed over a period of two or three years of working with the child and many parents seemed to have forgotten the description that they gave of their child when they first began in the program.

Parents can be shown how to help the deaf child understand the answer to some of his questions such as the following: Who am I? Who is my family? What can I do? What do I know? What do I like? What will happen?

Let me digress and give an example of the importance of the printed word. Right before Christmas I was baby sitting a five year old hearing child who had been very vague about what he wanted for Christmas. Just to entertain him, I said, "It's time to write a letter to Santa Claus. I will start it for you, then you tell me what you want to say. Printing carefully and pronouncing the names of the letters as I wrote, I said, "D E A R, Dear, S A N T A, Santa, C L A U S, Claus. Now what do you want to tell him I will write just what you tell me to say. You may ask for three things." He very carefully named all the items he wanted in three groups. For example, a cowboy hat, a gun and holster set and some cowboy boots, he explained to me, "are one thing." As I completed the letter I said, "Now, all we have to do is put this in an envelope and ask your daddy to go mail it." As I started to fold the letter he yelled, "Wait, wait!" I stopped, and he said, "Oh, don't fold it on the words!"

The other day I read to the same child all the questions on the Piers-Harris Children's Self Concept Scale and recorded "yes" or "no" as he answered. Number 32 states: I pick on my brother(s) and sister(s). This does not apply to him because he is an only child, but unfortunately his elderly grandmother came to live at his house last November. She is ill and unhappy and has never liked children. He pulled me over to whisper in my ear, "I pick on grandmother because she is so mean." As I started to record his remark, he said in a most horrified tone, "Don't write that down! Put that I have a frog in a jar that I pick on!" Now I won't go into all the things that might be involved in those statements. Maybe he hoped a witch would turn her into a frog or maybe he thought if he could just get the poor old soul in a jar, he would clamp the lid on, but I just want to point out his feeling about the importance of the written word. He could not bear to have what he had said in print.

The deaf child can develop this same feeling about the importance of things in print at a very early age. You are all familiar with the experience chart. If you begin very early and draw enough pictures, you can use a version of the experience chart, even with a two year old who needs to know what is going to happen to him. In our work with the very young deaf child over the past few years we have come to the conclusion that the two year old can be interested in the printed form if you lead up to it in the proper way with drawings and if the letters are from 1½ to 2 inches tall. Parents can be shown how to draw stick figures and how to print.

We have five preschool classes over the state and we require the parents to send a written, illustrated sentence every morning. All went well with one parent while the child was three, but during her fourth year she began discarding the paper Mama had prepared in favor of more recent happenings. For example, if Mama boiled crayfish one afternoon, Chantelle was very happy with an illustrated sentence. If friends came over later, Chantelle would shake her head sadly at the mother as she threw the paper in the trash, and would indicate with fresh paper and a pen that Mama must write a new sentence. Sometimes the second paper would be discarded because Chantelle had seen something interesting on the way to school. Many three and four year old deaf children begin to spell their own sentences, especially if the parents have been using Visible English at home. This reminds me of another listing that Fitts (1971:38) gave of things that affect the self concept:

1. Experiences, especially inter-personal experiences which generate positive feelings and a sense of value and worth.
2. Competence in areas that are valued by the individual and others.
3. Self-actualization, or the implementation and realization of one's true personal potentialities—whatever they may be.

Parents value the learning of language. The interest that the young deaf child shows in his surroundings and his experiences causes his parents to give him the same beaming looks that the hearing child gets when he begins to talk.

We on the staff have tried to think of other experiences that could be provided to give the deaf child a sense of value and worth. One thing that has proven very popular is a paper doll to represent him. Instead of dressing one paper doll to represent how we dress for the weather, we make one for each child. If his hair is brown, we talk about it and make the paper doll's hair brown; if his eyes are blue, we make the dolls eyes blue, etc. This is something that you can do without any expensive equipment. To make your paper doll last all year, you can laminate it. If you do not have a laminating machine, use clear Contact Paper. Each time a child wears something new, you have to make new clothes for the doll, but once you get his wardrobe complete, it doesn't take long for him to choose the clothes which show the way he is dressed each morning. You may challenge this statement if you like, but the look on his face tells us that he thinks: I am important. My clothes are important. I can be represented. I am me!

Read Selma Fraiberg's book, *The Magic Years.* On page 183, she tells about a five year old boy who asked, "Does a mouse know it's a mouse?" When she asked him what he meant, he said, "Well, like I know I'm me."

We could give many examples of the things children have done that show that they are pleased with the paper doll, but one teacher summed it up when she said she used it with her Sunday School class and they were far more pleased with it than anything she told them that God had done!

SUMMARY

Audience attentive, favorably impressed with materials developed for improving child's self-concept.

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FINANCIAL PROBLEMS OF ATHLETIC PROGRAMS

James V. Alsobrook, athletic director, Florida School for the Deaf, St. Augustine

In an open forum discussion on Financial Programs of Athletic Programs the following areas were discussed:

1. Rising Cost
2. How to Improve Funding of Athletic Programs
3. Arguments for Interscholastic Sports
4. Developing a Budget

All schools present agreed that there was not an overabundance of funds for athletic programs. Some avenues that were suggested to improve the situation were: increase in activity tickets, better gate sales and money raising projects by clubs for the athletic program.

Interscholastic sports present a positive program to the students. They help the student build a better self-image. A good athletic program is a vital part of the life of a school. It gives the school a certain personality. It is a force that unites the past, present and future of a school in to a common bond of friendship and fellowship.

Scheduling problems were not covered, but everyone agreed that scheduling teams of comparative size is becoming difficult.

LEARNING DISABILITIES—DETECTION—DIAGNOSIS—REMEDIATON

Henrietta Anthony, director, Wayne Multiple Handicapped Center and Wayne Shelter School, Wayne, N.J.

Introduction

My presentations at this conference will be concerned mainly with learning disabilities found in children who are multiply-handicapped. Each group of handicapped children overlaps to some extent with each of the other groups. A child may have a learning disability superimposed on deafness or any one or more handicaps—emotional problems, learning disorders and communication difficulties.

Early detection, proper education programs and proper home management is of the utmost importance.

I. DETECTION

Who are the children with learning disabilities?

They belong to a category of exceptional children who are easier to describe than define. They are children who indicate a demonstrated inability to perform a specific task which is normally found within individuals of similar mental ability.

I am sure most of you are familiar with the youngster who has an extremely short attention span, is hyperkinetic, reads and writes poorly, has poor coordination, reverses numbers and letters in writing, does not follow directions and may be a discipline problem. He may be a very sweet child and quite bright but he does not listen, does not mind and does not learn. Things that you have tried that should have worked with him, did not. Those children usually display an educationally significant discrepancy between their actual level of functioning. They may be educationally retarded, perceptually impaired, emotionally disturbed or minimally brain damaged.

Perceptually impaired is a term that has become widely used. It is confusing to parents and some teachers. Children who have a perceptual handicap take longer to learn to get meaning from looking, listening, touching and moving. They take longer to learn to remember what they have seen, heard, felt or done; and longer to learn to integrate information from two or more senses. Some are slow at making visual decisions; they do not hear or discriminate sounds accurately. They may be awkward and clumsy. It is difficult for them to reproduce what they have seen and repeat what they have heard. They resemble younger, less experienced children in these perceptual problems. These children have not yet learned to do things most children of a similar age group have learned to accomplish.

The condition of minimal brain damage or minimal brain dysfunction has been defined as follows in a 1966 publication of the United States Department of Health, Education and Welfare:

> . . . The term minimal brain dysfunction syndrome refers . . . to children of near average, average or above average intelligence with certain learning or behavioral disabilities ranging from mild to severe, which are associated with deviations of function of the central nervous system. These deviations may manifest themselves by various combinations of impairment in perception conceptualization, language, memory and control of attention, impulse or motor function. Similar symptoms may or may not complicate the problems of children with cerebral palsy, epilepsy, mental retardation, blindness or deafness.

Whether a learning disability is due to minimal brain damage is really not of great consequence to the teacher since his job is to teach a child to do things he cannot do regardless of what caused the child's problem.

What *are* some of the causes of learning disability?

The impairment may be genetic, may be caused by prenatal brain injury, injury to the nervous system as a result of a disease, accident, sensory deprivation, poor nutrition or poor environment.

Myklebust and Boshes classify factors that impair learning into three main categories: "those which have a psychological causation, those caused by impairment of the peripheral nervous system, and those due to the disorders of the central nervous system."

These deterrents to learning can be shown as follows:

Psychological disorders	Peripheral nervous system disorders	Central nervous system disorders
Neuroses	Deafness	Perceptual defects.
Psychoses	Blindness	Language disorders.

II. EARLY IDENTIFICATION

In a child's early years measures that define potential learning ability are usually based on developmental histories such as physical and psychological examinations. Many of these children however, slip by unnoticed in spite of the diagnostic procedures used.

Why is early identification important to us as educators?

1. We can provide opportunities for intervention.
2. Pre-school intervention provides readiness for school tasks later on.
3. Early identification furnishes guidance in later placement.
4. Advance notice can be given to schools so that suitable facilities can be provided when the child reaches school age.
5. The possibility of emotional disturbance is lessened.

Prediction measures are not diagnostic instruments. They identify a high risk group with high global quality. I.Q. tests are a poor prediction measure. The test results will be necessarily low because the child has a learning problem.

Psychological tests are helpful in analyzing personality and areas of emotional strengths and weaknesses as they affect a child's social, academic and intellectual functioning.

Identification implies that a condition is recognized. The term prediction connotes something that is not yet in evidence but which is believed may develop.

Barbara Keogh suggests that caution should be followed in enthusiasm for early identification.

Some of the complexities mentioned are:

1. What are the goals against which we make predictions? Good marks—enthusiasm for learning.
2. What early signs have validity in predicting later development and achievement in school? Growth rate—perceptual organization—language—social relationship.
3. At what age should prediction start? If screening in kindergarten has proved helpful, how about screening at three or four years of age?
4. What about labeling a youngster as a possible failure?
5. Is it fair to base a prediction on the characteristics of the child when we know that success or failure in school are based on the interraction between the child and environment?

Parents of pre-school children are often not aware of the symptoms which indicate a possible later problem their child might have when he enters school.

Some of the signs would be slowness in sitting, walking, talking, toilet training, dressing, response to verbal signals, lack of interest in newness and in play, poor sleeping habits, poor coordination, inability to express wants, excessive crying, little facial expression, unaware of the location of objects, does not gesture to communicate, does not imitate sounds, and does not seem to understand what parents say to him.

It is important for the parents to be involved in the pre-school education of their children.

Remediation.—The home can provide many activities, repetition and practical experiences children need.

Reading materials, films, records and lectures help parents to work with children and understand their problems. At the Multiple Handicapped Center "rap sessions" with parents, the school psychologist and myself have proved to be helpful in many cases. Some parents have been reluctant to attend conferences, to visit the school, and to discuss their children's progress. We have found that these parents are beginning to talk about their children's behavior at home, are learning to accept their children's handicaps and are showing increased interest in learning how to help their children.

Ordinary household duties, a ride in the car and a shopping trip to the supermarket can be made into meaningful teaching situations. The kitchen is a good place for mother to have her youngster help her. The following activities deal with real life situations and serve as excellent exercises for children: beating eggs, shelling peas, grating, stirring, pouring, and measuring. Pouring dry materials like rice or beans is good preparation for pouring liquids later on. A vocabulary can be developed along with the activities. Children will learn clean, hot, cold, liquid, dry, wet, sweet, sour, etc.

An awareness for order and sequence can be developed. Simple recipes can be followed under mother's supervision. Making a peanut butter and jelly sandwich can be fun. Assisting with other tasks such as these presents further opportunity to develop gross motor control, visual and auditory perception and improve the child's ability to use language, cleaning, dusting, setting objects in their proper places and going to the store.

Setting the table, learning to group articles like shoes and gloves in pairs help in developing the left-right concept.

Listening skills can be strengthened by listening to the radio, listening to stories read aloud, listening for and answering the telephone and listening and taking part in short conversations which are of interest to the child.

A large calendar hung at the child's level will assist him in keeping track of the days of the week. An alarm clock will attract the youngster in learning to tell time. A scale in the bathroom, a thermometer hung outside the window and a tape measure or ruler will teach some of the measuring devices used.

Games play an important part in a young child's life. Where there is an element of fun and activity learning takes place faster. A child should learn to catch and throw a large soft ball. Rules of various games are learned as well as the vocabulary associated with particular games. Card games teach not only number recognition, number concepts, grouping and sequence but improve finger dexterity. Children learn social relations by playing with other children. A child needs the skills to interact with other children.

Involvement in life at home can provide a feeling of success that can help counteract a child's sense of failure he may experience when he first enters school.

Parents and professionals must work together to see that the child receives the help he needs.

III. KINDERGARTEN

No one is in a better position to prevent later learning problems as they appear than the kindergarten teacher. Most teachers with experience are able to sense a child with deviant behavior. They are able to recognize patterns of behavior, attitudes and responses as well as learning problems. It has been my experience that if a classroom teacher refers a pupil for a specific learning disability he is usually correct in his observation.

A child of kindergarten age should be able to recognize common geometric forms like a triangle, a square and circle. He should be able to throw a ball and have it land in the direction it was aimed. He should enjoy television. He should be able to recognize cereal packages by name and recognize familiar road signs.

By the time a youngster enters kindergarten his speech should be reasonably clear. He should be able to follow directions involving three separate orders, e.g. "put this book on my desk, close the door and skip to your seat." He should be able to describe an experience, tell a short story and answer simple questions.

By the age of five most children can skip. They show a definite hand preference. At five a child can usually bounce a large ball and throw and catch a ball. He can copy a square. His drawing will have angles that are more or less right angles and sides which appear more or less equal.

A five year old can copy a stack of six blocks.

He should know colors. He can probably count ten objects and if the position of the objects is changed and regrouped he will know the number of objects is the same. A youngster of five will understand the meaning of bigger, smaller, longer, shorter, more or less. He will understand the concept of inside, outside, above, below.

An evaluation of a child starts with the day he enters kindergarten. How did he come into the classroom? Did he cry? Did he hide behind his mother? Did he respond when you asked his name? This may seem unimportant but the many behaviors the child exhibits provide a great deal of information.

It is important to find out what the child can do as well as what he cannot do. The manner in which he performs tasks should be noted. When a child can accomplish a task he is usually cooperative. When he cannot his behavior changes. He may suddenly appear to lose interest, he may turn his head away, cover his ears or talk about something totally irrelevant. In order to be sure it was not a case of being tired or bored the task should be presented a little later to find out if the same response is given.

The evaluation might start by testing visual perception abilities. A simple puzzle or form board with a few large pieces used in kindergarten can be given to the child. If he cannot do it, can he perform with verbal help from the teacher? If the teacher places one or two pieces of the puzzle can he continue?

How does the child hold a crayon? Does he control it when asked to draw or color something? Which hand does he use? Many youngsters with neurological impairment do not establish handedness at the age it is usually accomplished and tend to use either hand.

Can the child copy a circle? What is his response when asked to draw a man, a boy, a girl or a woman? If he cannot even partially draw a semblance of a person does he respond when the teacher draws a circle for a head and asks him to put in the eyes, nose and mouth? Appropriate gestures can be used with children who do not seem to understand spoken language.

Can he recognize and name pictures? The Peabody Language cards can be used for this purpose. One picture at a time should be presented.

Does he understand action shown in a picture? Does he know the meaning of who, where, what?

Can he match objects or pictures that are the same?

When he has matched pictures can he point to a picture when the teacher names it? Start with three or four pictures or objects. Gestures can be used to describe pictures if necessary.

Can the pupil count objects?

How has the child behaved? Has he listened? Is he extremely active or is he withdrawn? Is he easily distracted? Does he seem to hear what has been said to him?

The evaluation techniques suggested should not be considered diagnostic. They are helpful in giving some understanding of the child and assist in setting up an educational program for him.

If the teacher believes the child needs to be observed and tested by other professionals she should make a referral through the school principal to the school psychologist. The psychologist will determine after observation and testing whether opinions from other disciplines are necessary.

I will discuss some activities which have proved to be helpful in working with children who have specific learning disabilities.

Perceptual Motor Skills.—Visual Tracking and Coordination.

1. Pupil holds head still and follows with his eyes a child who walks across front of classroom and back.
2. A ball is rolled on the floor. Pupil is asked to track it and count aloud until ball stops.
3. Teacher sits in front of pupil holding a pencil (eraser end toward child) about 18 or 20 inches from center line of child's nose. The teacher moves the pencil slowly to the right, left, up and down. Child holds head still and follows pencil with eyes.
4. Pupil will follow chalk line as it is drawn. He points with finger as line is drawn from left to right.

Figure—Ground discrimination

1. Pupil is asked to point out objects in picture. "Point out the big building across the street from the trees." "Point out the girl in front of the house."

2. Tracing two and three dimensional forms with fingers. Trace them on paper. Use stencils or templates to trace designs.
3. Simple jig saw puzzles.
4. Use Continental Press materials to teach visual organization and integration of separated pieces of pictures.
5. Sorting similar objects.

Visual discrimination

1. Matching colors.
2. Matching objects.
3. Three or four blocks and one cylinder. Child is to select the one that is different. Progress to paper and crayon and ditto sheet with rows of large simple geometric figures. Pupil is requested to look carefully at first design in each row. "Mark the one just like this one."
4. Continental Press and Fitzhugh Plus programs are useful.

Visual memory

1. Four or five objects are placed on a table. After a few seconds, child is asked to cover his eyes or turn around. One object is removed. Child uncovers his eyes and is asked to tell what is missing.
2. Pupil closes his eyes. Teacher asks him to describe what he is wearing.
3. Teacher asks what pupil had for breakfast.
4. Four pictures are placed on table. After a few seconds, pictures are removed, shuffled and given to the pupil. He is requested to place them on the table in the original order.
5. Several arrows placed in different directions are drawn on chalkboard or paper. Teacher holds up a card with an arrow on it. Pupil is asked to point to the arrow on the paper or board that is pointing in the same direction.
6. Show child simple design. Have him reproduce it from memory.

Reversals or inversions.—Letters such as d, b, p, q, are reversed. Words like saw or on are reversed.

1. Tracing letters and words on a variety of surfaces or in sand or salt. The pupil should say the letter or word as he traces. Pupil is later requested to write on paper what he has traced and spoken.
2. Left-right discrimination should be taught.
3. Use of a marker moved along the line of writing encourages left-right progression.
4. The first word to be read can be underlined in color preferably green which would indicate starting point, red can be used at the end of the word or sentence.

Visual—Fine motor control

1. A line, circle and square is drawn on chalkboard. Pupil is asked to trace these with his fingers, then draw the forms.
2. Pupils reproduce simple forms on paper with crayon. Designs are filled in. The forms are cut out and traced for practice.
3. Task board with zipper, snaps, buttons and button holes, lacing, etc., is given to the pupil to develop his ability to manipulate objects.

Spatial form manipulation.—The ability to move in space and to manipulate three dimensional objects.

1. Give the pupil geometric forms consisting of blocks, cones, spheres, cylinders and pyramids and let him explore and play with them.
2. Teacher constructs simple projects with blocks and asks pupil to build the same pattern.
3. Using a doll house the pupil arranges furniture and dolls.
4. Frostig Program for the Development of Visual Perception.
5. Montessori blocks.
6. Three dimensional toy puzzles.
7. Pupil is requested to draw a picture of himself. When a child has difficulty the teacher should point out the body parts and ask the pupil to include them in his drawing.

Auditory perception.—Acuity. The ability to receive and discriminate various sounds.

1. Rhythm band instruments used in free play.
2. Recordings of trains, airplanes, hammering, etc.
3. Animal sounds. Use pictures and recordings.
4. Telephones (Teletrainer).
5. Singing.
6. Children with a significant hearing loss should be taught speech therapy.

Form constancy.—Similarities of shape, size and color are not recognized by the pupil. In reading, words used in a new context are not recognized.

1. Early training should start with three dimensional objects. The pupil is asked to find those the same.
2. A consistent form should be used in writing symbols and words.
3. New forms should be introduced gradually.

Spatial relationship.—The pupil cannot see the relationship of two objects to each other and to himself. He will have difficulty in stringing beads. He will confuse letters and numbers in writing.

1. Practice in comparing three dimensional objects. Later single dimensional small objects can be used.
2. Following the dots or number.
3. Reproducing forms from memory. Reinforce with the correct form when necessary.

Again, Frostig exercises are helpful.

Position in space.—Left-right confusion is found. The pupil is not aware of the relation of objects to himself. Confusion in placing objects from verbal instructions, reversal of letters and substitutions in reading. Difficulty in initial sounds in reading.

Training is usually begun in gross motor control. Later on pencil and paper may be used.

1. Body awareness should be developed. Outline of pupil's body can be traced on a large sheet of wrapping paper. R and L are emphasized.
2. Marching, following verbal directions for right, left, front and back.
3. Writing on chalkboard is helpful.
4. Large print and writing has worked well.
5. Developing concepts of on, over, up, under, in, etc.

Frostig and Kephart have a variety of materials dealing with remediation of this disability.

Gross motor impairment.—A child who has poor gross motor control is described as clumsy, awkward and uncoordinated. He may have trouble using stairs, taking part in physical education activities, and in generally moving about.

There are many suggestions offered that children who are poorly coordinated do not do as well academically as those children who are well coordinated.

These children need practice every day. An older child can be given written directions to follow at home.

These exercises will help in training:

1. Jumping rope.
2. Hopping on one foot then the other.
3. Front roll somersault.
4. Walking balance board.
5. Crawling through hoops.
6. Moving arms and legs on direction while lying on back.
7. Throwing a ball.
8. Catching a ball.
9. Playing ping pong.
10. Batting a soft ball which has been set on top of a road cone.

Activities should progress from gross to fine motor control.

Fine motor control impairment

1. Pupils come to chalk board and trace forms the teacher has made. These simple forms may be a line, a circle, a triangle and a square.

2. Pupils are asked to copy the forms on paper. Crayons or Magic Marker can be used. Children may fill in the designs, then trace outline. Use large pencil with young children. Designs may be cut out and traced again.

3. Templates or stencils may be used for practice.

4. Task booklet or board with a zipper, belt and buckle, lacing, snaps and hooks can be given to pupil for increasing skills.

5. Stringing macaroni or beads.

6. Follow the number picture completion patterns.

7. Teacher requests pupil to write or print his name then trace.

8. Pupil is instructed to follow a simple maze drawn by the teacher.

9. Dotted lines forming the pupils' names connected by children.

Physically handicapped children.—Children who have cerebral palsy, muscular dystrophy or who are orthopedically handicapped should have an opportunity to take part as much as they are able in every activity. These children should be encouraged and not overprotected. The things they can do well should be emphasized. Physical therapy should be provided if indicated. Physical education should be geared to increase their motor skills.

Summary

1. We know that some children of average intelligence and a sound personality have trouble learning.

2. It is necessary for teachers, parents and professionals to work together to help the child.

3. Children with learning problems may need to be taught things other children learn naturally. They may need help not only in school tasks but in how to relate or socialize and how to play.

4. These youngsters can be identified in their pre-school years and be given help before they experience failure.

Comment

General questions—no negative or controversial questions or statements.

IV. MULTIPLE HANDICAPPED CENTER

There have been an increasing number of children who are labeled multiply handicapped. These are youngsters who require more than one kind of special service. For example a child may be blind and have a speech problem. He will need a teacher for the blind and the services of a speech therapist.

Two generalizations have appeared from the studies of Wishik (1956) Friedman and Mac Queen (1971) and others. Only one half of handicapped children have one outstanding disability, another quarter have two disabilities and the other quarter have three or more. The most significant disabilities for special education are mental retardation, behavior disorders and speech impairments.

McCay Vernon (1969) did an interesting research project on multiple-handicapped deaf children. The study involved 1,468 deaf children. The causes of deafness in this population were rubella, meningitis, prematurity, erythroblastosis and heredity. Seven generalizations were developed from the study:

1. An appreciable amount of behavioral variance among deaf children is not due to their hearing loss. The variance occurs in areas which are of utmost importance to academic learning.
2. The recent increase in the number of multiply handicapped deaf children is caused by the current diseases which bring on hearing loss and of advances in medicine related to the treatment of these diseases.
3. The study can be related to other deaf populations having similar causes of deafness.
4. The changing causes of deafness may produce less academically capable deaf youth in the future.
5. Many of the behavioral and learning problems that have been attributed only to deafness may be caused by central nervous system dysfunctions in addition to auditory impairment.
6. Certain similarities in this group of children suggested certain similar central nervous system involvements. The genetic deaf appeared to be free of neurological impairment. Children whose deafness was caused by meningitis showed a different kind of neurological impairment.
7. The earlier in a child's development that the disease or early birth occurs, the more serious and permanent are the results.

The studies indicate the importance for further planning of educational programs to help these youngsters. Thought should be given in preparing them for more vocational preparation.

The Multiple Handicapped Center in Wayne provides educational services in a day setting to meet the needs of children who are multiply handicapped. There are fifty-two children enrolled in the school. These children come from sixteen school districts in Northern New Jersey.

The criteria.—The criteria for selection of pupils at the Wayne Multiple Handicapped Center are:

1. The child must have more than one handicapping condition. The combined disabilities must be of such nature as to impede learning to an extent where other existing school facilities are inadequate to the child's problems.
2. The child must have a physical disability complicated by social and emotional involvement.
3. The child has two or more disabilities which by competent professional authority can best be provided for in a multiple-handicapped class.

Such categories might be:

Educable mentally retarded
Visually handicapped
Auditorially impaired
Communication handicapped
Neurologically or perceptually impaired
Orthopedically handicapped
Emotionally disturbed
Socially maladjusted
Severe learning disability
Multiple-handicapped

New students are screened by the psychologists and learning disability specialists who make an educational prescription for them.

The main objective of the program offered at the Center is to prepare pupils for eventual placement and participation in a regular or special education class in their resident school districts.

Activities to Accomplish the Objectives.—In addition to the regular classroom teachers, there is a teacher-aide for each class, a full time speech therapist, physical education instructor and nurse, a part time psychologist, social worker, music teacher and physician.

All children take part in every phase of the program.

Recently a survey was made by a physical therapist to determine the number of children who would benefit from physical therapy. Twenty-two pupils were selected. Of the twenty-two pupils, ten are receiving physical therapy privately. We hope to be able to provide physical therapy in the near future. One of the teachers recently received a Mini Grant for one thousand dollars to help defray the cost of a consultant and pediatrician.

In order to provide the kind of educatonal experience multiple-handicapped children require it is necessary to have a variety of materials and equipment to meet the individual needs of our pupils.

Since the children are severely handicapped, effective learning is achieved with prescriptive teaching modified to meet the pupils' needs. Placement, teaching methods, instructional materials and equipment implement the prescriptive teaching.

The pupils are taught to be aware of their potentialities and limitations and to participate within prescribed limits.

The relaxed atmosphere in the classrooms and throughout the Center is one which promotes healthy emotional development.

Subject Areas.—All activities are selected in terms of individual need rather than as part of prescribed curriculum. All instruction is assigned and taught at the pupils' developmental and readiness level. Each child is taught individually and moves ahead at his own rate.

Staff members are alert to the existence of special social and physical needs of the pupils and provide additional specific areas of study and activity to meet these needs.

Arithmetic.—Each concept is taught systematically and thoroughly learned before the child moves on. The Sterns Structural Arithmetic Program, Distar Arithmetic, Addison Wesley Series teacher made materials and others are used.

Pupils at primary level are taught basic quantitative concepts. The elementary level stresses development of skills based on meaningful experiences.

Reading.—Various methods are used to teach reading. Most of the pupils require a good deal of readiness activity. Oral language growth, sight vocabulary, phonics and word recognition skills are taught. The Distar Reading Program, The Parkinson Reading Program, Words in Color, The Pug Series and Scott Forsman Open Highways Series are used. In May, a representative of the Grolier Company demonstrated the Grolier Creative Reading Program to all special education teachers, reading specialists and child study team members. The meeting was held at the Center. We hope to purchase one set for use at the Center next year. It is intended as a supplementary program and not meant to be used exclusively. The Special Service Department is also purchasing one for use by the supplementary teachers.

Social Studies.—The social studies lessons are centered around the kinds of experiences the pupils should be having in school, the home, and the community. Films, filmstrips, discussions and socio-drama are used. Community agencies, social and recreational facilities are studied through visits from and talks by resource people.

The older pupil's program continues and extends beyond the primary years.

Spelling and Writing.—These subjects are taught as skills in relation to their use. Since writing and spelling is used for written communication, these skills are taught in that context. The Zoner Bloser system of manuscript and cursive writing is used.

Science.—Science activities include field trips, firsthand experiences, examining and making exhibits or displays and experiments. Charts, films, filmstrips, T.V. programs and talks by resource personnel are used for instructional purposes.

Speech Therapy and Language Development.—Most of the pupils attending the Center have a communication problem. Speech help is offered daily. The purpose of this aspect of the program is to correct speech disorders and to provide an overall speech correction and language development program. The Language Master, Peabody Language Kit are used.

This past school year at the Pioneer Club, an organization composed of members of the New Jersey Bell Telephone Company, donated a talking doll and a talking dog to the Center. These have proved to be extremely helpful in working with children who are shy or have speech problems.

Arts and Crafts.—In addition to fine arts, arts and crafts and industrial arts are included in the program. Goals are to develop visual perception and motor control, to establish spatial relationships, to help the child in his socialization with a group and to aid in the teaching of reading, writing and arithmetic.

Music.—Music instruction provided experiences in listening, singing appreciation, rhythmic activities and creative expression.

Parents.—Individual parent conferences are held twice during the school year and at other times when necessary or when requested. Close contact is maintained with the parents by teachers, nurse, psychologist and coordinator.

Staff.—Inservice training is provided during the year to promote professional growth.

The coordinator visits the classrooms daily and is available to confer with the teachers to assist them in developing methods of instruction. The entire staff works as a team on the individual problems of each student.

Pupil evaluation.—Continuous evaluation of each pupil is made by members of the staff. The Center maintains a complete, accurate educational evaluation of each pupil which is used in conjunction with other diagnostic information.

At the end of the school year a progress report and evaluation are sent to the parents and superintendents of the sending districts.

Frequent visits from members of the child study teams from the sending school districts are encouraged.

The Center has come to serve unique functions in northern New Jersey. First, it provided classroom space for children from districts which cannot accommodate a multiple-handicapped child through their educational service. The Center is able to offer an intensive diagnosis of each pupil. In addition the Center has assisted sending school districts in placing their children in other educational settings.

We believe we are meeting a great need in the education of handicapped children and that the program offered at the Center provides beneficial and productive results.

The program has grown and shows signs of continuing to grow, as evidenced by the many referrals and applications that are received. At this time I would like to show some slides of the activities carried on at the Multiple Handicapped Center. If you have any questions at the end of session please do not hesitate to ask or contact me later in the day.

V. METHODS FOR TEACHING HANDICAPPED CHILDREN

In working with handicapped children it is necessary to slow down the rate of teaching and provide for much repetition. Some ideas which have proved to be helpful at the Multiple Handicapped Center are:

1. Use many approaches to find the one that will work with an individual child. No matter how unorthodox, if a technique works, use it. Use all the senses and make up ways to help him to understand and remember.

2. Teach one step at a time slowly and thoroughly. Later, combine them. This method is used not only for academic subjects but for activities such as jumping rope, setting a table, and riding a tricycle or bicycle.

3. Some pupils learn better using all their senses. Touching sanded letters and numbers, drawings or charts, using pictures and counting by using concrete objects or performing an activity such as counting steps often helps. Those children who cannot profit from a multisensory approach need a simple grammatic method. In some instances the teacher must keep talk at a minimum.

4. Lessons should not bore the child. Drill can be presented in a variety of ways such as games with rewards or some type of surprise. During our cookie break the children and teachers sit and talk informally and it is surprising to see how many situations arise where learning and understanding take place during this period.

5. Children who are having difficulty in mathematics or reading often are asked to help younger pupils who are working at a lower level. This gives the older child a feeling of confidence and at the same time it provides reinforcement for the skills learned previously.

6. Develop skill in weak areas and also work through their strengths. Games can help in improving memory. If a child has good auditory memory have him practice spelling words aloud in a rhythmic pattern.

7. Some children cannot memorize. It is necessary for them to learn the sounds of the letters and the rules of spelling. In teaching mathematics these youngsters need to understand relationships. The times tables can be taught by explaining that each step in the table is simply adding the number of that table to the previous answer and that it is a fast way of doing addition. Concrete aids should be used.

8. Children who have poor coordination will need help in handwriting and probably may need to learn how to tie their shoes, buckle a belt, etc.

9. A variety of materials is essential. These do not all have to be commercial materials since they are usually expensive. Again, simple teacher made games and materials in the hands of a good teacher serve the purpose. An ordinary deck of cards is useful in teaching numbers, sorting, grouping and in developing visual discrimination, thinking and manual dexterity.

Teaching Resource materials, Words in Color, Stern's Structural Arithmetic, the Try Program, Continental Press are good commercial educational materials. Some workbooks are excellent since the material is programmed in small, sequential steps and the child knows immediately if the answer he has filled in is right or wrong.

10. Children who write poorly can practice using many kinds of writing materials such as large primary pencils, felt markers in a variety of colors and crayons. Pupils who have great difficulty in writing should not be expected to meet the regular classroom standards. The amount of written work should be reduced. Ditto sheets in arithmetic and reading limit the amount of writing. Typing has been favored to help these youngsters.

11. Children with learning problems must be taught to think about what they see, hear and do. Many youngsters are not able to understand experiences. We often take for granted that children understand

relationships, causes and beginnings. These children should be told to ask questions when they do not understand. The alert teacher soon recognizes the pupil who does not comprehend and takes time to work individually with him to insure understanding.

12. Pupils should not be penalized for incorrect spelling in other subject areas. Their list of spelling words should be reduced.

13. Minimize distractions. Study carrels or screens assist a distractable child in attending to an assignment.

14. Provision should be made to use films, film strips, tapes, television programs and records for those pupils who have severe reading problems and cannot use a text book.

15. To help pupils learn concepts of space, number and time, simple tasks can be assigned such as recording the date on the chalkboard, writing the class schedule, writing a list of names of children in the class, addresses, their birthdays, and telephone numbers and record the temperature of the room and outdoors.

16. Report cards should be modified. At the Center no grades are written. The report is narrative. This is an example of the method used at the Center for evaluating pupils' progress. The report is sent home twice a year. The superintendent of the sending district receives copies.

17. Many nursery schools and kindergartens are using the Montessori program. The Montessori method stresses motor, sensory and language development. Many aspects of this technique of teaching are of relevance not only to a slow learning child but to the emotionally disturbed, visually and auditorially impaired, communication handicapped, brain damaged, physically handicapped, the underachiever, and the socially disadvantaged.

Although Maria Montessori did not develop her educational program with the deaf child in mind and her methods cannot be expected to meet all the problems that confront teachers of the deaf, many facets of her educational theories and techniques can be used in working with the deaf child. The deaf child's needs are much the same with the exception of language to those of the hearing child.

For the older children there is a lack of materials for learning disorders. Pre-occupational and work activity programs should be instituted at this level. Job habit training should be supplied. The Follett, Marfax and Richardson materials are good at the intermediate and upper grade levels.

Family life skills should be taught to the girls. Methods and materials have been emphasized but the teacher is most important. Teachers must have a sound basic understanding of educational procedures and learning theories.

Teachers should think about what goes on inside themselves. They should be good listeners, good followers and good friends. The teacher must believe each child *can* learn and will do better with his help. The relationship between the teacher and pupil is important. The teacher must *want* to help the child and must have an understanding of the child. Teachers need help by the specialists in working with pupils. In-service training is essential.

Children who are handicapped should have an extended school year. At the Multiple Handicapped Center we have an eleven month school year and eventually hope to have a twelve month school year. We have found that pupils make greater progress in the extended school year, particularly in reading and in language growth. The long interruption of a two months vacation is a serious handicap to these children. There is a high rate of forgetting and deficiency in work-study habits. There is a reduction of pressure in the summer program and the teachers can follow the pupils' progress more closely. New applicants accepted at the Center begin in July. This affords the staff an opportunity to further evaluate the pupils and prescribe an educational program for the fall term.

For the special education pupils, the extended school year is a must but it is good for all children.

There are a multiplicity of factors related to learning and we really know so little. New research is needed in the field of learning disabilities not only in early detection but in methods of dealing with learning problems and in program evaluations. Working with handicapped children is rewarding and exciting when we realize we are able in some small measure to change the behavior of many youngsters.

COMMENT

General questions—no negative questions or statements.

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SPEECH IMPROVEMENT FOR DEAF ADOLESCENTS

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INTRODUCTION

"The term 'communication' is a broad term which is often used to include not only the process of ideas, experiences and their meanings through mass media and mechanical means, but it is also used to include the various modalities of language behavior which includes speech, reading, writing, spelling and numerical expressions and calculations." (Blake, 1971: 27) My comments today will focus more specifically on speech communication as the expression of thoughts and feelings in spoken words. (Webster, 1970: 1368) This, very simply, is speech.

The acquisition of intelligible speech and the desire and confidence to use speech habitually and functionally in all life situations depends largely upon the attitude, application of special skills, hard work and continuous use of speech in all activities on the part of the deaf child, his family, his teachers and others who associate with him throughout his entire lifetime. Oral communication skills are not easily acquired by deaf children. It requires years of building and improving within a program which evolves with continuity. Continuity and consistency are the essence of any sound program of speech development for deaf children. (Speech Curriculum Guide, 1971.) My experience has been limited to the program at The Clarke School for the Deaf and my comments will reflect this in our discussion of speech improvement for deaf adolescents.

DESCRIPTIVE OVERVIEW OF DEAF ADOLESCENTS

The children we are concerned with range in age from 13 to 18 years and have profound hearing losses. They should receive the benefit of amplification from their personal hearing aids or a group amplification system throughout the entire day—unless an activity prohibits its use, such as swimming. Use of the hearing aid is essential in oral instruction and vital to the teaching of speech to the deaf. The high correlation between use of residual hearing and speech intelligibility is apparent. Even the totally deaf child, however, can acquire an appreciation of the rhythm of speech through his hearing aid. Like their hearing peers, these children are interested in social events and the opposite sex, and are concerned about self-image. Their need to conform and identify with their own age group is typical of both the hearing and deaf adolescent. Self-consciousness about wearing a hearing aid has greatly been reduced due to current hair styles and, of course, new advances in ear-level aids which may be suitable for profoundly deaf individuals.

In many respects, developmental factors greatly facilitate speech improvement. This transitional period from childhood to adulthood is characterized by increasing emotional, physical and social maturity. The turbulence of pubescence has passed and the students are ready to cope with the many tasks which will prepare them for adulthood and functioning with hearing citizens. Motivation for improvement during this time becomes intense and intrinsic as the students anticipate the reality of graduation and the implications of attending high school with hearing children. "Even the less gifted individual is well aware of the need for achievement at as high a level as possible if he is to find a place in a highly complex and increasingly competitive labor market." (Powell, 1963: 104)

Parental concern and involvement continues, and often dramatically heightens, at this time. Ewing and others describe the importance of providing early and continued support to parents of deaf children. It is vital that parents never be allowed to feel they have passed on their inherent responsibilities to others at any stage of their child's education. (Ewing, 1964: 111) The child's impending integration into high school will often prompt greater parental concern in their child's speech improvement and intelligibility. Continuity, as mentioned earlier, is necessary within all phases of the educational program. Continuity between the school and the home is also necessary and further facilitated by parental interest at this time. Classroom visits are strongly encouraged and conferences frequently scheduled.

SPEECH PROGRAM AT THE CLARKE SCHOOL FOR THE DEAF

Every child in The Clarke School for the Deaf has a 45-minute period daily in speech class. They are grouped according to age, hearing loss and speech intelligibility. Suggested lesson plans for the classroom work are distributed weekly by the coordinator of the speech program.

These may be easily adapted to meet the individual's speech needs and interests. Problems of voice quality, articulation and speech rhythm are the major areas of concern. Speech improvement and correction is also a part of the students' other academic classes. Understanding of the subject matter is not enough. The students must be able to discuss intelligibly and intelligently what they have learned. Since most teachers of academic subjects teach a speech class also, there is a strong awareness of the importance of intelligible speech in all classes. Teachers of extracurricular activities are also speech conscious and frequently refer children's speech difficulties to the coordinator or to the speech teacher. Lessons are then prepared accordingly.

In addition to speech classes, individual tutoring is scheduled during the speech class period in Speech Lab. Student teachers, under the direction of the coordinator, work with students daily for 20-minute periods. Group amplification equipment is used in every classroom as well as the Speech Lab to facilitate use of residual hearing and to better assist the children to understand their own speech and the speech patterns of others. Children are rescheduled every seven weeks during the school year. The students are selected on the basis of their speech needs. Older students frequently request Speech Lab, which again reflects their strong motivation. Other requests are made by teachers, supervising teachers and parents. The basic system of orthography used is the Northampton Vowel and Consonant Charts. Gradually students are introduced to and acquire a sound understanding of Thorndike and Webster dictionary markings. By adolescence, most students use all three systems comfortably.

"It appears that continuity of the use of the technique rather than the system itself has the stronger influence upon the extent in which children are able to succeed in any particular phonetic system." (Magner, 1971: 251)

KINDS OF SPEECH PROBLEMS AND REMEDIATION

The most common types of speech problems amongst the adolescent deaf population may be grouped according to the three main areas described earlier; that is, articulation, rhythm and voice quality. The attitudes and abilities of the teachers, as well as the physical and psychological state of the child, are significant determinants of effective remediation. In addition to a sound understanding of remedial techniques, the speech teacher must also possess highly developed listening skills for the purpose of speech analysis. A multisensory approach is essential for all speech teaching activities; i.e., audition, vision, touch.

Articulation

Articulation errors may involve consonants, vowels, compound consonants, syllabification and accent, although Hudgins and Numbers concluded that consonants are of greater importance than vowels in determining speech intelligibility. They observed seven types of consonant errors; namely, (1) surd-sonant distinctions, or failure to distinguish between voiced and voiceless consonants, (2) malarticulation of abutting consonants, (3) malarticulation of compound consonants, (4) substitution of one consonant for another, (5) nonfunctioning of releasing consonants, (6) nonfunctioning of arresting consonants and (7) lack of velum control with resultant hyper and/or hyponasality. (Hudgins and Numbers, 1942: 321–322.)

With the exception of velar control, articulation errors such as these are less problematic to correct than other kinds of errors. Each student's speech is periodically analyzed and evaluated with the more obvious errors noted. The next and very crucial phase is student awareness. Initially, awareness is teacher-centered; there is a gradual shift, however, as the student becomes increasingly more conscious of his errors. In addition, most students of this age are able to self-correct their articulation errors with relative ease since they have had several years of intensive speech and auditory training. "The pupil must always be helped to realize his problem and to understand how he can solve it. He himself must be held responsible, but he must be guided one step at a time and encouraged all the way. Never should the child be subjected to lengthy sessions in which the teacher repeats the sound again and again. It is the pupil rather than the teacher who should receive the reinforcement as each articulation need is noted; the child must be given special consistent help." (Magner, 1971: 259.) Each student may receive such help formally in the classroom or within tutorial sessions, or informally in the dining room, dormitory, gym or in other out-of-school situations. Some examples of formal remediation of articulation errors are (1) abutting consonants and (2) contractions.

Abutting consonants

When two consonants *bump into* one another, we must learn to keep them *smooth*.

Example: in the basket

Make the *th* in the word *the* start immediately after the *n* in the word *in*. *If you drop the tongue after* the *n*, it will make an extra syllable *in-u-the*. Let the tongue slide quietly forward and give breath and voice for the *th* when you complete the *n* (inthe).

Make the *sk* join together in ba*sk*et by starting the k before you finish the *s*. *If you drop the tongue or move your lips, an extra syllable will appear—basuket.*

Now put the syllables together quickly (in the basket) or

Practice lesson: in the basket
on the bookcase
at the ball game
after the black dog
after the white cat
under the big table

Jean made a dress in the sewing class.
Tom played basketball after school.
Sam came to the party in the gym.
The book list was very long.

Contractions

Remember to stress the first syllable of the contraction.

Example: didn't Emphasize *did*. Hold the final *d*. Then give a long *n* and release the *t*. Do not let breath come between *d* and *n*.

Contrast the contraction with these phrases, emphasizing *not:*

did not did not go did not see

Practice contractions that are made in the same way.

did not	didn't
would not	wouldn't
should not	shouldn't
had not	hadn't

I did not go to the movies on Saturday.
I didn't get a letter from Mother this week.
Children should not take candy from strangers.
We shouldn't use poor table manners.

Practice contractions in which *s* is held.

is not	isn't
was not	wasn't
has not	hasn't

Paul is not very tall.
Lynda isn't going home tomorrow.
Jim was not here yesterday.
Nancy wasn't happy about her report card.
Tom has not finished his homework.
Theresa hasn't seen the newspaper today.

Concomitant growth in vocabulary and language skills is also considered in preparing meangingful speech activities for the adolescent. This naturally necessitates work in the areas of syllabification and accent. "Negotiations," for example, was a word of recent interest to adolescents and adults. A consistent system of syllabification is needed.

Thus: $$\text{“N Ĕ} \;\Big|\; \overset{\shortmid}{\text{G}}\ \underset{\text{o-e}}{\underline{\text{Ó}}} \;\Big|\; \underset{\text{s-h}}{\underline{\text{T}}}\ \text{Ĭ} \;\Big|\; \underset{\text{a-e}}{\underline{\text{Á}}} \;\Big|\; \underset{\text{sh}}{\underline{\text{T I}}}\ \text{Ŏ N}\ \overset{2}{\text{S}}\text{”}$$

Such a word must be immediately placed back into the phrase
“Continued negotiations . . .”
and then into the original sentence
“Continued negotiations were held in Vietnam last week.”

The student is required to produce the word, phrase and then entire sentence correctly. These steps are necessary for promotion of natural rhythm as well as correct articulation.

Rhythm

Since speech rhythm contributes significantly to speech intelligibility, consistent and continuous work is done in this area. “Comparison of the relative importance of speech rhythm, consonants, and vowels, for speech intelligibility reveals that the contributions of rhythm are just as great as those of consonants, and that both rhythm and consonants are of greater importance than vowels in determining speech intelligibility.” (Hudgins and Numbers, 1942: 389.) On the basis of their early research, Hudgins and Numbers concluded that intelligibility, or the lack of it, is largely determined by the frequency of errors of consonant articulation and errors of speech rhythm.

Specific areas of speech rhythm include rate of syllable utterance, proper grouping, timing and phrasing of syllables and natural stress for accent and emphasis. Fundamental to the acquisition of appropriate rhythmic patterns is a good model. Teachers and parents must speak *naturally* to the children, using phrases and sentences at a normal pattern of timing. Earlier instruction further requires the student to speak two or more syllables on a single expiration of breath while incorporating natural accentuation. A variety of syllables and accent patterns will afford students the practice necessary before the transition to words, phrases and sentences is made. The child should be encouraged to give unaccented syllables less time than accented syllables and to avoid the emission of breath or voice between syllables. A visual pattern may help students to understand the timing process.

Example: pa($\dot{\text{r}}$) $\overset{\shortmid}{\text{pa}}$(r) pa($\dot{\text{r}}$) $\overset{\shortmid}{\text{pa}}$(r) or •—— •——

The teacher must further guide the student to say the accented syllable with increased duration, pitch and intensity. Success with syllable practice is followed by words and phrasing which match the rhythmic pattern.

Example: pă(r) pă(r) pá(r)
understand
in the hall
Mister Jones

These examples may very well be viewed as articulation drills. The relationship of accent to articulation and to rhythm, however, is a meaningful one and should not be confusing to the older deaf child.

As accent gives prominence to a syllable in subordination to other syllables, emphasis gives prominence to one particular word in subordination to other words in much the same manner. (Haycock, 1966: 32.) Since emphasis is dictated or determined by the speaker's intentions and feelings, specific learning activities must be provided to help the child express himself in a natural manner. They must learn which words are important or significant to the meaning of the sentence or phrase. In addition to lengthening, intensifying and raising the pitch level, a brief pause following the emphasized word will further give it dominance.

Example: A *mǎn* went to a *pařty Satuřday.*

Questions to denote differences may further facilitate this area of speech improvement.

Example: Who has a pen? *Ǐ* have a pen.

What do you have? I have a *peň*.

The deaf child continues to need help in the proper grouping of syllables and phrasing of speech during adolescence. Assuming previous work of this nature has been done gradually, and proceeding from the simple to the complex, it becomes essentially a process of refinement for the deaf adolescent. The rules for proper phrasing, as described by Haycock (Haycock, 1966: 61), have proved invaluable to teachers and students. More sophisticated vocabulary can be used, nicely reinforcing work in English classes. For example, the children are reminded to pause, but not necessarily take a breath, after nouns, objective pronouns, punctuation marks, verbals, before prepositions and conjunctions, but not after subjective pronouns.

The relationship of pitch control to inflection is also a significant aspect of speech rhythm but will be discussed with the various aspects of voice quality.

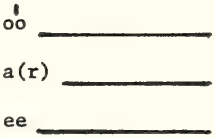
Voice quality

There are frequent differences of opinion regarding what constitutes voice quality. Traditionally, sound produced in the process of speech have been viewed in terms of voice and diction or articulation, inferring that these two areas are distinctly separate. Obviously the two affect each other (Bronstein and Jacoby, 1967: 14) and, in turn, influence the rhythmic pattern. Carrell and Tiffany state the terminology for describing different qualities of voice is quite unsatisfactory. The several terms in use, such as gutteral, throaty, etc., are vague, subjective and undoubtedly involve other aspects of speech production (Carrell and Tiffany, 1969: 267.)

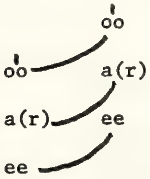
Whatever descriptive terms are used, there must be a common interpretation by teachers and students. For simplicity, the terms strength, resonance, pitch or placement and inflection are used in the Clarke School program.

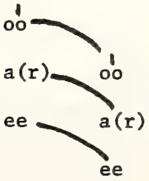
One common concern of teachers of deaf adolescents is that of voice changes. Although more obvious in boys, there is a similar shift in the habitual pitch of girls which must not be ignored. If teachers, prior to this period of development, have fostered pleasant voices by their own examples, avoided tension in the children, maintained keen listening habits and implemented appropriate remedial techniques as each problem occurred, the poor voice quality which afflicts a few older deaf students might not have developed. Assuming the deaf child's voice quality was of a pleasant nature prior to voice change, there should be no subsequent difficulty. For a period of time, voluntary control of pitch will be physiologically and kinesthetically impossible, or at least very difficult for the student. When there is evidence that the student's habitual pitch is less erratic, intervention may prove both therapeutic and preventive. The teacher may prefer to use mechanical aids to assess the normalcy of the pitch range and provide instant visual feedback. Reminding the students to use a lower, more comfortable pitch range is also effective in out-of-class situations. Visual, tactile and auditory cues should be made available in formal sessions.

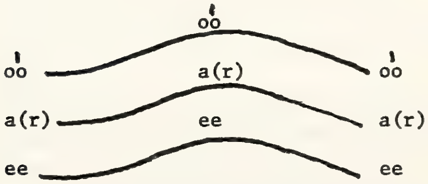
Once the pitch control and range has been established and appears to approximate a normal range, it may now be appropriate to resume work on sustaining pitch control.



If the student can sustain such vowels as o̍o, a(r) and ee at a constant pitch, he may be ready now for reinforcing previous work on inflection; that is, producing a rising and falling pitch within a syllable utterance.







Pitch control and inflection should be a consistent feature throughout the child's educational program. Words such as "mother" and phrases such as "good morning" are then introduced and the child attempts to imitate the teacher's model; i.e., visually, tactily and auditorily. One cannot ignore the resonators which contribute significantly to voice quality. According to (Greene 1964: 47), these are "those air-filled cavities situated above and below the vocal tracts to which the sound waves have access and from which they receive sympathetic reinforcement in their passage to the external air." Perhaps the most problematic area influencing resonance amongst the deaf is velar control, leading to problems of hypernasality, hyponasality or one of a mixed nature. Hypernasality, or the excessive nasal emission of breath and voice, may be reduced by exercises which enable the child to feel, see and, hopefully, hear such excessive nasalization. The clouding of a blackboard, mirror or movement of a feather as the child says the vowels a(r) or aw may clearly demonstrate the problem visually and increase his awareness. Placement of the child's own hand on his nose will reinforce this tactily. Further exercises are now appropriate to strengthen the muscles of the soft palate and tongue. (See Speech Development, Curriculum Series, The Clarke School for the Deaf, 1971). Significant research and experimentation is currently underway which may prove very helpful diagnostically and therapeutically.

Hyponasality, or the absence of nasal resonance, appears far less difficult to correct and may include many of the same corrective exercises for hypernasality. It is essential to teach the child to lengthen m, n, ng, again using tactile, visual and auditory cues. These sounds, as well as l and s, if lengthened, will increase overall intelligibility. It's important to note, however, that these, and *all consonants*, are never presented in isolation. They are always presented with a vowel, but may be in a releasing or arresting function.

|
Example: noo   na(r)   nee
|
oon   a(r)n   een

a nose   a knife

RELATED ACTIVITIES

Other factors which contribute to improved speech among deaf adolescents might be considered peripheral to the main speech and academic program but actually serve as vital sources for reinforcement, transfer of learning and motivation.

Cheerleading is an appealing and popular activity for both hearing and deaf adolescents. Practice and perseverance by students and their physical education instructor are necessary if the results are to be orally successful.

Athletic competition against teams consisting of hearing players serves a similar purpose for adolescent boys. Skiing lessons, provided by instructors unfamiliar with the speech of the deaf, is another activity which has met with great success.

A regularly scheduled television program, such as Clarke Morning News, helps to motivate students to work toward more intelligible and effective oral communication. Upper School students broadcast the news, weather and sports to the campus each Tuesday, Wednesday and Thursday morning. News stories are gathered and written by the students, with assistance available from the homeroom teacher.

Other extracurricular activities which emphasize the importance of speech are assemblies, field trips, chapel services, scouting, driver education and sewing, art and cooking classes. An attempt should be made to include specific work on the language and vocabulary associated with these activities and thus underscore the significance of intelligible speech throughout the entire day.

EVALUATION

To determine the specific nature of the students' difficulties, appropriate learning activities, effects of remediation and overall progress, frequent audiotaping and listening sessions are advisable. Diagnostic records of each child's speech, prepared by teachers, student teachers and the coordinator of the speech program, have proved invaluable in planning individualized speech work. Further evaluations to assess progress may be planned accordingly.

A speech intelligibility test is administered semiannually to every child from the third year course of study through the senior class in the Clarke School program. The sentences recorded are scored and then spliced on an audiotape reel and kept as part of each child's cumulative speech record throughout his years in school. These scores provide a general indication of the students' intelligibility level developmentally and chronologically. Such testing is another source of motivation for the older students.

SUMMARY

Speech improvement for deaf adolescents is basically contingent upon the skills of the teacher, the continuity and consistency of method and approach and the intrinsic motivation of the student. Speech improvement at this developmental level is largely one of remediation and refinement of difficulties in speech rhythm, articulation and voice quality. A sound speech program which extends itself into the interests and activities of the students is essential.

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AN INVESTIGATION OF SENSORY INPUT CHANGE IN THE SPEECH DISCRIMINATION BEHAVIOR OF A PRESCHOOL CHILD

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Introduction

There are basically two procedures used to teach auditory discrimination behavior to hearing impaired children. One procedure is the multisensory or bisensory approach in which the child is presented with visual and auditory cues to aid in the discrimination of the spoken word. There is research data to support the theory that hearing impaired children obtainer higher speech discrimination scores when they are able to use both their vision and hearing to discriminate as opposed to either modality alone (Numbers and Hudgins, 1948; Hutton, 1959; Prall, 1957).

The second approach is the unisensory or acoupedic approach. The basic input channel is the ear. The child is taught to discriminate the spoken word by attending to only the acoustic properties of the stimulus and not the visual properties. Proponents of this approach (Pollack, 1971; Wedenberg, 1954) theorize that profoundly hearing impaired children tend to use their vision for taking in information and not their hearing. Pollack (1971) believes that children who learn auditory discrimination through a unisensory approach will speechread spontaneously.

In this study a moderately hearing impaired preschool child was used to investigate picture to sound association learning through an auditory input and an auditory-visual input. When criteria was obtained for the material learned through auditory input alone, the visual properties of the stimulus were added to the auditory properties and the discrimination behavior was observed. Likewise, when learning criteria was obtained for the material learned through a combined auditory-visual input, the visual properties of the stimulus were removed and the discrimination behavior was again observed.

A single-subject, multiple-baseline design was used to investigate two research questions.

(1) When a hearing impaired child learns a set of five two syllable pictures through a combined auditory and visual procedure will he maintain his learned behavior when the visual properties of the stimulus are withdrawn?

(2) When a hearing impaired child learns a set of five two syllable pictures through an auditory procedure will he maintain his learned behavior when the visual properties of the stimulus are added?

Subject and setting

The subject for this study was a four year old moderately hearing impaired child. He wore an over the ear hearing aid in his left ear. He had hearing at 40db (250Hz), 40db (500Hz), 100db (IK Hz), and no responses beyond 1K Hz. He had a relatively flat loss in his left ear with hearing at 70db (250Hz), 70db (500Hz), 60db (1K Hz), 60db (2K Hz), 55db (4K Hz), and 40db (8K Hz). The subject was a member of a preschool class for the hearing impaired at the Hearing and Speech Department-Kansas University Medical Center. When this study began the subject had been in a formalized educational setting for only two months and had been wearing a hearing aid for only two months.

The study took place in a therapy room at the L. B. Spake Speech and Hearing Clinic of the Kansas University Medical Center. The room contained a small table and a small chair. Pictures used in the study were placed side by side in front of the subject. A small light was on the edge of the table opposite the subject and in front of the experimenter. It was operated by the experimenter and used to indicate correctness after a response. A one way observation window was to the subject's right. An observer sat in the observation room to record the data.

Stimulus Materials

Twenty-two syllable words were used as auditory stimulus materials. The pictures were from the Peabody Language Development Kit. The words were chosen because of the subject's inability to associate these pictures with the auditory or the auditory-visual stimulus.

The 20 words were placed in 4 groups. Table 1 contains the group, the input used, and the pictures for each group.

TABLE 1.—WORD GROUPS

Group a—A-V	Group b—A-V control	Group c—A	Group d—A control
Penquin	Bacon	Fireman	Padlock.
Beaver	Onion	Cowboy	Robot.
Chipmunk	Lettuce	Teacher	Wagon.
Peacock	Hotdog	Dentist	Dresser.
Donkey	Sandwich	Lifeguard	Saddle.

The 5 words in group A were taught while the subject was able to attend to the speaker visually and auditorily. Words in group B were the control words for the auditory-visual training set. The group C set of words were taught while the subject was only able to attend to the auditory input while the words in group D were control words for the auditory input set.

Three randomized presentation orders were devised for stimulus presentation and positioning. This controlled for position responding.

Design

A single-subject, multiple-baseline design was used for both the auditory and the auditory-visual training sets. Table 2 outlines the design and the criteria for each phase of the design.

TABLE 2.—DESIGN

Condition	Description	Criteria
Training set:		
Baseline	Pretraining behavior	20 percent responding or less for 2 sessions in both auditory and auditory-visual input.
Training I	Free operant	9 of 10 correct responses for 2 consecutive sessions.
Training II	Prompting	5 of 5 correct responses for 2 consecutive sessions.
Training III	Prompting withdrawn	9 of 10 correct responses for 2 consecutive sessions.
Input change	Auditory input was changed to auditory-visual and vice versa.	
Control set:		
Baseline	Pretraining behavior	Baseline data was collected until both training sets reached learning criteria.
Training I	Prompting	5 of 5 correct responses for 2 consecutive sessions.
Training II	Prompting withdrawn	9 of 10 correct responses for 2 consecutive sessions.
Input change	Auditory input was changed to auditory-visual and vice versa.	

Procedures

A session was held each school day, Monday through Thursday, for approximately 15 minutes. At each session the subject was greeted and seated at the table. With the help of his mother the subject checked his hearing aid battery on a VU meter. In order to get a behavioral measure that his aid was functioning, 4 pictures were placed in front of the subject (tree, dog, fish, cat), and he was to point to the picture after the experimenter said the word. The stimulus was auditory. If the subject responded correctly the training session began, if errors were made the aid was carefully examined.

When a stimulus is described as an auditory presentation this means that the experimenter gave no cues other than auditory. An auditory-visual presentation of the stimulus means that the subject was given the stimulus when he was looking at the experimenter and could receive cues visually and auditorily.

At each session of the study the subject was given 40 stimulus presentations. Ten (each word twice) for the training set, and 10 (each word twice) for the control set in each training condition.

Pretraining

Prior to data collection a pretraining session was held. The subject was taught to respond by (a) attending to the experimenter, (b) placing the index finger of his right hand to his right ear, and (c) placing that finger on one of the 5 pictures following the auditory or auditory-visual stimulus presentation.

Baseline

At each baseline session the following stimulus-response chain was used. The discriminative stimulus (S^D) was the event in the presence of which the subject responded. The response (R) was the behavior the subject emitted after the S^D was presented. Fig. 1 outlines the stimulus-response chain for the baseline condition.

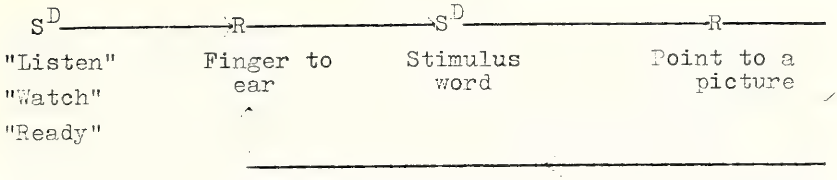


FIGURE 1.—Stimulus-response chain for the baseline condition.

Each word in the study was presented to the subject twice per session. The first was an auditory-visual stimulus presentation and the second was an auditory stimulus presentation. The 5 pictures were placed side by side in front of the subject. The picture order was predetermined and was one of three picture and presentation orders. Responses in baseline were not consequated. Criteria was 20% responding or less for each of the two baseline sessions.

Training I

Sessions three through 6 were free operant sessions. After each correct response by the subject the small light opposite the subject would be turned on by the experimenter for a short duration. Fig. 2 outlines the stimulus-response chain used in each training session.

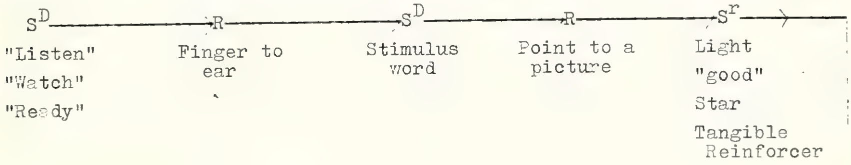


FIGURE 2.—Stimulus-response chain for each training condition.

Training II

A prompting condition was begun at session 7 for both training sets. The experimenter in both the auditory and auditory-visual training sets would point to the correct picture immediately following his auditory or auditory-visual stimulus presentation. The subject would then point to the correct picture imitating the experimenter, the light would go on and the experimenter would say a word(s) of social praise, i.e. "good," "that's right," "OK."

This procedure was followed for the first 5 words in the set. The subject would then respond to the same 5 words in a different order without the prompt cue from the experimenter. Criteria for the prompting condition for both training sets was 5 of 5 correct responses for 2 consecutive sessions.

Training III

When prompting criteria was reached, the prompting was withdrawn. The subject was given each word twice, not simultaneously, without prompting cues. During the Training III condition for the auditory-visual training set, 3 changes were made in consequating correct responses. The 3 changes also applied to the auditory set but all 3 changes did not begin during the Training III phase of that training set.

At session #32 the consequence for correct responding was changed for both training sets. A star was given for each correct response. The star was placed on a piece of paper which was divided into ten horizontal squares. This paper was placed in the upper left hand corner of the table and was fully visible to the subject. The star was paired with the light and the social praise from the experimenter. At the conclusion of the session the subject took the paper with all the stars with him.

Beginning with session #39 and continuing for the duration of the study and only in the training sets of the study each wrong response by the subject elicited a "no" from the experimenter. The experimenter would then place his finger on the correct picture and repeat the stimulus item.

At session #37 and thereafter when the subject responded with 10 of 10 correct responses in a training session he was given tangible reinforcement. For the remainder of the study a correct response elicited (a) the light, (b) social praise, (c) a star, and(d) tangible reinforcement for 10 of 10 correct responses per set. Criteria for the Training III phase of the study was 9 of 10 correct responses for 2 consecutive sessions.

Input change

When learning criteria, 9 of 10 correct responses for 2 consecutive sessions, was reached the stimulus input was changed at the next session. Words that had been presented auditory-visual were now presented through auditory input alone, and words presented auditorily were now presented auditory-visual. All other conditions for the input change phases of the study remained the same.

Control set

Baseline.—Baseline data was taken each day for group B and D words until the training sets A and C reached criteria. During baseline each of the 5 words in sets B and D were presented twice per session with no consequence for a correct response.

Training I.—Procedures and criteria for Training I on the control set were identical to the Training II procedures for the trained sets with the exception of the consequence changes reported above.

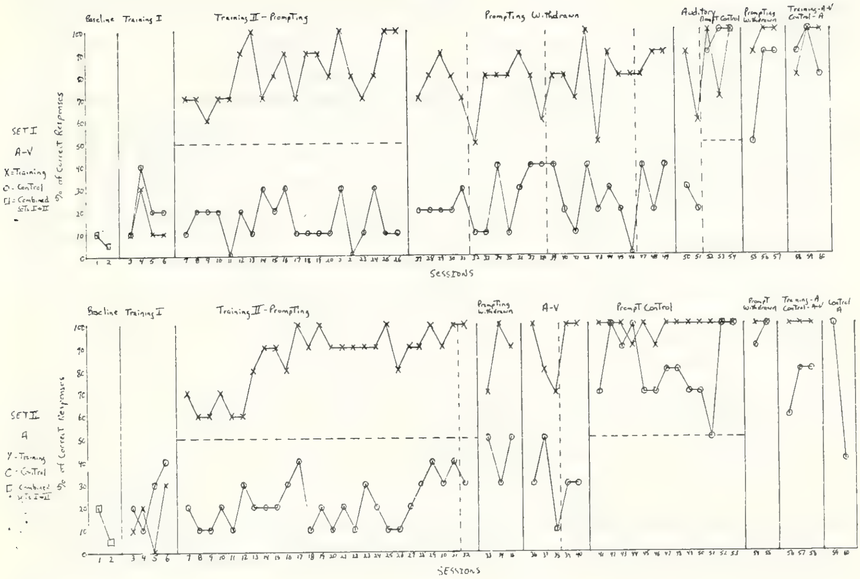
Training II.—Procedures and criteria for Training II on the control set were identical to the Training III procedures for the trained sets with the exception of the consequence changes reported above.

Input change.—Procedures and criteria for the input change condition on the control set were identical to the input change procedures in the training sets.

Results: See Table 3.

TABLE 3.

DATA



Set I—Training and group A words (auditory and visual input)

Criteria for the Training II phase was obtained at sessions 25 and 26. When prompting was withdrawn criteria was met at sessions 48 and 49. At session 50, the first session of input change (subject can only get auditory cues), he maintained his responding by scoring 9 of 10 correct responses. He dropped to 60% in session 51, increased to 100% in session 52, dropped to 70% in session 53, increased to 100% again in session 54. At session 58 the input was again changed (subject received visual as well as auditory cues) and the subject scored 80% but increased to 100% in the final two sessions.

Set I—Control (group C) for the auditory-visual training set

Baseline data in sessions 1 through 51 ranged from a high of 40% to 0% correct responding. Criteria for the prompt condition was obtained at sessions 53 and 54. Criteria for the prompting withdrawn condition was met within three sessions at sessions 56 and 57. The input change (subject only received auditory cues) occurred at sessions 58–60. The subject scored 90%, 100%, and 80% for those three sessions.

Set II—Training for group C words (auditory input only)

Criteria for the Training II phase of the study was obtained after sessions 31 and 32. Three sessions later criteria was reached in the prompting withdrawn condition at sessions 34 and 35. At session 36, the first session of input change (the subject could now see the experimenter's mouth as well as receive auditory cues) the subject scored 100%. The next two sessions dropped to 80 and 70% respectively. In sessions 39–55 the subject scored 90 or 100% at each session.

At sessions 56–59 the input was changed again (subject only received auditory cues) and the subject obtained 100% scores for each of the 3 sessions.

Set II—Control (group D) for the auditory set

Baseline data in sessions 1 through 40 ranged from a high of 50% to 0% correct responding. Criteria for the prompt condition was obtained at sessions 52 and 53. Criteria for the prompting withdrawn condition was met at the next two sessions, 54 and 55. The input change (subject received visual as well as auditory cues) occurred at sessions 56–58. The subject scored 60%, 80%, and 80% for those three sessions. At sessions 59 and 60 the input was again changed (subject only received auditory cues) and he scored 100% at session 59 and 40% at sesssion 60.

Discussion

The purpose of this study was to determine if a hearing impaired child, when taught words through a bisensory approach, would be able to continue correct responding when denied visual cues. Further, would the addition of visual cues to a set of words learned auditorily have any effect on discrimination.

In 3 of 4 sets (A–V Training, A–V Control, and A Training) the subject maintained or scored higher at the session immediately following the input change. When visual cues were removed from the auditory-visual stimuli in both the training and the control sets the subject was able to make the discrimination. This could not have been done if the subject had not been attending to auditory cues in the training sessions. When visual cues were added to the auditory stimuli of the auditory-visual training set the subject scored 100% and then dropped for the next two sessions before recovering. When the auditory control set was trained however, there was a decrease in responding from 100% to 60% followed by two 80% sessions.

An analysis of the errors made by the subject revealed a confusion between the items "beaver" and "peacock" in group A which was the auditory-visual training set. These words appear to be different visually and auditorily. However, the first syllable in both words have identical visual stimulus properties. Auditorily, the vowel in the first syllable is identical with voicing being the only distinctive feature difference between the phonemes /b/ and /p/. The implication of this finding is that the educator does not know what property of the stimulus the child is attending to when he discriminates. It also points out the necessity to analyze the visual and auditory properties of the stimulus items used in discrimination training.

This study is significant in that the procedures used were responsible for the change in the subject's discrimination behavior. This was shown in the multiple-baseline design. Responses to the control sets, B and D, remained low until the procedures used in sets A and C were applied to sets B and D causing responses to increase to criteria.

It is obvious from the data that new material can not be learned under either stimulus presentation condition without indicating in some way to the subject that his response was appropriate. The implication is that when children emit acceptable behaviors they must be given an indication that their response was appropriate and acceptable to the teacher.

The subject did not require as many sessions to learn the control words, groups B and D. In the auditory-visual training set, the subject required 43 sessions to reach criteria with prompting withdrawn while the control set required only 6 sessions. In the auditory set, the subject required 29 sessions while the auditory control set required 15 sessions. This could be due to the subject's better understanding of the discrimination task, or perhaps the properties of the stimulus items may have been more easily recognized visually and/or auditorily. The design of the study does not permit one to explain the reason for this occurrence.

In all 4 sets there was a drop in responding when the prompt cue was removed in the prompting withdrawn condition. This may have short and long term memory implications. There is a difference between recalling something after two or three minutes and recalling the material after 24 hours. Imitation or short term memory recall should not imply that material is learned.

When can an educator say that an auditory discrimination has been learned? In this study learning was said to have occurred when the child could point to the appropriate picture when presented with an auditory or an auditory-visual stimulus. It did not require that the subject say the words, use them in a sentence, or identify the words outside of the context in which he learned them. Learning must be defined for a particular situation.

The results of the study permit the following conclusions.

1. This subject learned this picture to sound association task through auditory input alone and through an auditory-visual input.
2. After learning through one procedure, the withdrawal of vision in the auditory-visual training set and the addition of vision in the auditory set did not alter discrimination responding.
3. In learning both sets this subject was using his residual hearing to make the discrimination.
4. The procedures used to train the sets A and C were responsible for the subject's increase in correct responding.

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TRENDS AND ISSUES IN DAY SCHOOL SECONDARY PROGRAMS

Herbert W. Barkuloo, Ph. D., supervisor, Program for the Hearing Impaired, Seattle Public Schools, Washington

The problems and suggestions for solution that will be discussed in the next few minutes are a reflection of the problems that I see in attempting to run a worthwhile secondary public school program for hearing-impaired students. Whether they can be generalized to other programs I do not know. But just as there are inherent problems common to residential programs I suspect that many of the problems I discuss are also inherent to other day school programs.

One of the cliches that used to be—and may still be—quoted in the residential schools was that the day schools used the residential school as a "dumping ground." Whether or not this was true is not the point. The point as reflected by American Annals for the Deaf statistics on day school—residential school population, is that more and more parents of hearing-impaired children appear to be accepting their personal responsibility toward their child and in turn demanding that the day schools accept the educational responsibility. In short more hearing-impaired students now attend day school programs than attend residential programs.

While I cannot generalize beyond my experience, this parental demand for responsibility means that no longer can some of our secondary public school programs consist of the hard-of-hearing and the occasional oral, language-competent deaf student.

The program implications are tremendous. With a relatively small population spread geographically across a city or a metropolis, with students ranging from those whose language and/or intellectual capacities are extremely limited to hard-of-hearing or deaf students who can, with support services, integrate into regular classes, the day school program must somehow meet an extremely wide variety of educational needs. In fact when one considers the facilities that the residential school can offer there is an inclination to question the ability of the day school program to duplicate or improve on the residential offerings. I would like to suggest, however, that this very difficult problem of offering a wide variety of services to a wide variety of students can be met by the day school programs. And further that in many cases the offerings can be broader than those offered by the residential system. The answer lies in the use of the total resources offered by the public school system and the surrounding community.

What this means is that the hearing-impaired secondary program is not necessarily located in one or two junior and senior high schools. Some groups of students may be attached to a vocational-technical high school, others may be attached to a school with broad prevocational offerings. Others may be in school for only a part of the day and be in an on-the-job training setting for a large segment of their school day. Others may be in self-contained classes with a traditional academic approach and others may be partially or fully integrated, with support services. At any rate the traditional, follow the public school curriculum approach will have to be greatly modified if we in the day school sector are to provide viable programs for all students with whom we are entrusted.

For example, it is obvious, at least to me, that as the public school programs accept most of the hearing-impaired students in their community the need for more vocationally oriented programs will increase. I do not believe that putting the deaf student in a woodshop or a print shop or any other kind of shop in the average residential or public school meets this need. However by utilizing all public school programs available within the city and perhaps more importantly by utilizing the industrial capacity of the city itself for career exposure and on-the-job experience the public school may well be able to surpass the residential school in its offerings—at least in those residential schools located in rural or small town environs or those tied to the traditional shops.

In the academic area the day school has a full component of resource persons to call upon: reading specialists, curriculum personnel, specialists in the other disability areas and others. We should use the availability of other disability personnel for the cross-placement of students and/or the in-service training of our teachers in order to deal with the wide variety of secondary handicaps with which the day schoool program must deal.

One of the hallmarks of public school education for hearing-impaired students has been that of integration with hearing students. As the public school population changes, the direct classroom contact with hearing students will, if we are to meet the need of the student, be diminished. I do not, however, view this with alarm. It seems to me that the benefits of staying within the home and the home school lie more in the family relationships, in the independence formed by the freedom to make mistakes and by the learning and competency gained through coping daily with new situations and people. These experiences are far more valuable than is sitting in the classroom with hearing students.

In spite of what I see as a movement toward more self-contained classrooms the fact remains that in the total use of school facilities referred to earlier there will undoubtedly be some periods in each day when even the academically slowest hearing-impaired student will find himself in a classroom of one sort or another with hearing students. What support will these students be offered? Too often in our programs we have a resource teacher who tutors in the academic subjects or we teach the academic subjects ourselves and we say that the hearing-impaired student can handle P.E. and the shops on his own. Nothing could be further from the truth. If speechreading and the use of residual hearing will not suffice in the regular classroom then they will not suffice for P.E. or the shops. In both the residential and the day school we often see a disregard for the tremendous opportunity for language, for mathematics and for the utilization of the thinking processes in these areas. If we in the day school programs are going to meet the needs of our students we must expand support services to all areas, not just the academic.

As I implied earlier I feel that integration as it is normally viewed in the day school programs will have to undergo a vast change as we deal with all students who come to us. I fail to see how we can program success to even the hard-of-hearing student in the regular classroom when, if you observe them closely, they are unable to catch the swift exchange of ideas that occur between the instructor and the 25 or so other students in the classroom. To me the benefits of integration into a regular school setting occur when the hearing-impaired student observes on a day to day basis the actions and reactions of hearing students and stores this information for use when he is out of school. The success in any program, residential or day, can be measured by the life success of the student, not his success as measured by an achievement test or by his report card.

The opportunity to interact with hearing students in the lunch room, or the playground, in the halls, and in extra-curricular activities along with the opportunity to deal with the daily life experience, good or bad, within the home represents the greatest advantages of integration for the day school hearing-impaired student.

One of the finest examples of integration that I have experienced is now occurring in our total communication elementary school for deaf students. In this school where very little academic integration is being attempted the 60 deaf students are fully integrated students in a 360 member student body. This has been accomplished because all school staff from cooks to principal, including students, are able to communicate with the deaf students. Each class of deaf students is attached to a hearing classroom and takes part in parties, field trips and other activities of the regular classroom. While the deaf students are not integrated into the academic classroom they are fully integrated into the more important experience of developing an appropriate life style.

Another area in which I feel the day school programs are going to have to become more heavily involved is direct student counseling. The permissive status of our society is not fully understood by our hearing-impaired students. They tend to move toward the extremes because they often do not have the knowledge as to where the limits of acceptability lie. In my experience this is particularly true of hard-of-hearing students who, because of their hearing, develop a higher degree of sophistication than their more severely impaired peers.

As we accept into our schools a more widely varied student body the need for counseling to select appropriate on-the-job training or other vocational exposure is also critical. Another function of the counselor lies in the education of the employer and in assisting the student and the employer in satisfactory adjustment to this new situation.

At the beginning of this presentation I expressed my concern that teachers in day schools take a greater role in this organization and by so doing end their own isolation in terms of knowledge of trends on a national level. The counselor can effect the same change in the students. Too often the day school student is unaware of post-secondary educational opportunities available to him. You are fully aware of the tremendous number of post-secondary facilities which have initiated programs for graduates of schools for the hearing-impaired. The counselor through his knowledge of these programs, through testing, providing secondary job experience and through counseling can assure that virtually every graduate can enter a post-secondary educational program or can be placed directly into a satisfactory job.

Another need that I see is that of the opportunity for social activities among hearing-impaired secondary school students. They are often bused into their school, they do not live in the local school attendance area, nor do the hearing-impaired students live near each other within the expanse of the city. There may be two possible negative results, both of which are potentially damaging to the student. First, school itself becomes the arena for socialization. That is, the isolated student perceives and uses the time when he should be learning, to engage in social activity. If his perception of school is purely a social one then learning becomes an incidental by-product of the more important social process. The other possible negative result is that the student simply and passively accepts the situation in which he finds himself and becomes an isolated person with all of the inherent psychological dangers. What can be done about this situation? The answers would seem to be simple but their execution may be complex. First of all can the hearing-impaired, particularly the profoundly deaf, and the hearing communicate with each other? If they can, the opportunity for school extra-curricular activity socialization is enhanced. Sign language classes for the hearing student can provide a mutually acceptable mode of communication and can result in appropriate social interaction.

What can the adult deaf community contribute? What about the parents? Can these groups sponsor periodic social events which allow the scattered students to get together and satisfy their need for social activity? As our day school programs expand we must face and alleviate the problem of possible social isolation of our students.

I have briefly attempted to define some of the problems which I perceive in planning and administering day school secondary programs. My comments may seem critical of day school programs but they are not intended to be so. With slight variations these problems are also problems within the residential system. The residential student who goes home for the summer to a family and community who do not really know or understand him is also isolated. The residential student under virtually constant supervision has limited opportunity to grow and to learn to be flexible in a world which demands flexibility. The residential school which puts all glory into those who pass the Gallaudet entrance examination is not likely to be meeting the needs of all of its students.

The thought that I would like to leave with you is that the pendulum is swinging. The majority of students are now in the day schools. The quality of the student as well as the quantity is changing. I believe that this can be healthy for deaf persons. Healthy if the day schools adjust to the needs of the students, forget the methodology arguments, help to educate the schools and the community, provide social outlets, and utilize all community resources. Finally, it will be a healthy move if the goal of the day school and the goal of the residential school is to produce a person secure and independent as a deaf person not insecure and dependent as a poor imitation of a hearing person.

THE MANAGEMENT OF READING INSTRUCTION

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Summary

It is Dr. Blanton's opinion, with his limited knowledge of deaf education that it would be more logical to start a child out with finger spelling than signs because this is more closely related to the skills involved in reading.

It was the opinion of one member of the section that if you came in as an advocate of fingerspelling or signs you would leave with the same feeling and therefore it would be more beneficial to draw on our speaker's experience with reading.

Dr. Blanton was unable to say or recommend a reading series because all of the ones that he knows of have been written for hearing children rather than deaf children.

It is true that the traditional reading books have been used for years but the average reading level for the deaf is still very, very low.

As far as reading tests are concerned the Metropolitan, or Stanford are just as good as any others. They all have their strong and weak points.

Reading is really a base for how much language we have. A "normal" child auds language. That means that he hears and sees it. The more auding a child can do the more language he will have.

Language is definitely a prerequisite to reading. They do not parallel. Overemphasis on reading, may be adverse to the child later.

It is impossible to develop skills and comprehension until there has been an experience that will make the reading meaningful.

Twenty-five % of the hearing children do not read at their grade level. Many hearing students with high IQ's are reading far below their level so you see that this is not confined to just the deaf.

If I were to set up a reading program I would use a good basal reader that had a good teachers manual. This would be supplemented by lots of high interest material. The children would be rotating so that they were in a class that was on their level and that there would be perhaps 3 days for reading and the other 2 days reading would be taught in connection with a subject area. Lots of workbooks would be available and each child would be working on his weakest area rather than all on the same page.

Most of the material that is produced today and is supposed to be high interest level, is not really high interest for the children.

TEACHER/RESEARCHER INTERACTION: A MODEL AND AN EXAMPLE

Arthur Boothroyd, Ph. D., director of research, Clarke School for the Deaf, Northampton, Mass.

A. INTRODUCTION

Many researchers who choose to study deafness, its consequences and its remediation, do so in the hope that their work will benefit the deaf. In examining the research literature of the past few decades, however, it seems that the amount of research which is ultimately of benefit is small compared with the total research effort.

Why is this? Are researchers asking and answering the wrong questions? Are educators not interested in change? Has the question of applied research been neglected in favor of fundamental research? Probably the answer should be a partial "yes" to all these questions. However, the purpose of this paper is not to suggest or to apportion blame, but rather to provide a conceptual framework within which to discuss problems of teacher/researcher interaction. By way of illustration, I shall describe an ongoing study in which at least some of these problems are being dealt with.

B. EVALUATION OF A COMPUTERIZED SYSTEM OF SPEECH TRAINING AIDS FOR THE DEAF

The system

A computer based system of speech analysis and display has been designed and built by Bolt, Beranek and Newman (BBN), Inc., under an Office of Education Contract. (Nickerson and Stevens, 1973). A block diagram of this system is shown in Fig. 1. Signals from a microphone, and a vibration detector (placed either on the nose or on the larynx) are passed through a filter bank and then analyzed by the computer. This information is examined 100 times every second, and used to generate a visual display, showing such features as loudness, voicing, pitch, nasality, aspiration and tongue position, either in graphical form (see Figure 2) or as some aspect of a cartoon game (see Fig. 3).

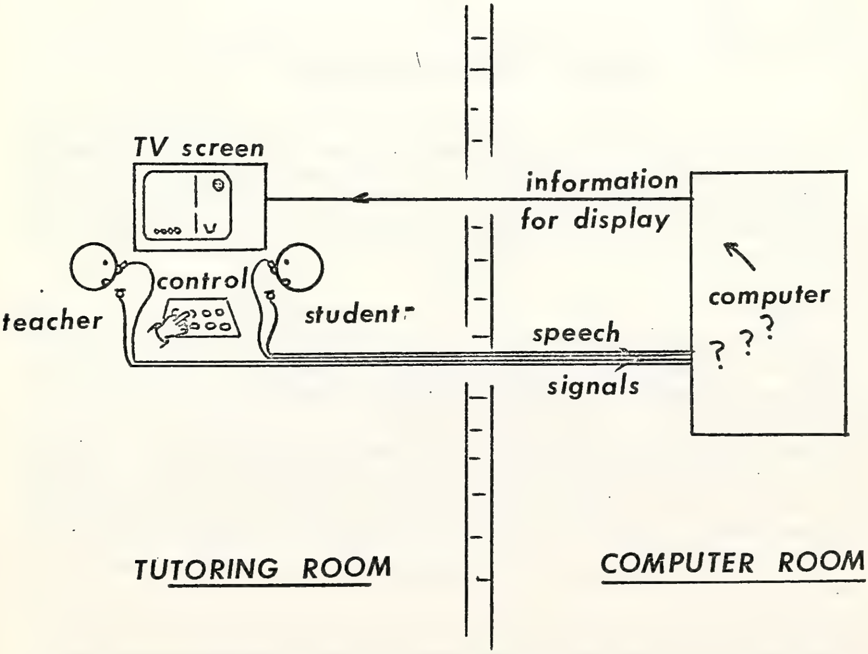

FIG. 1.—Schematic diagram of computer-based speech training system.

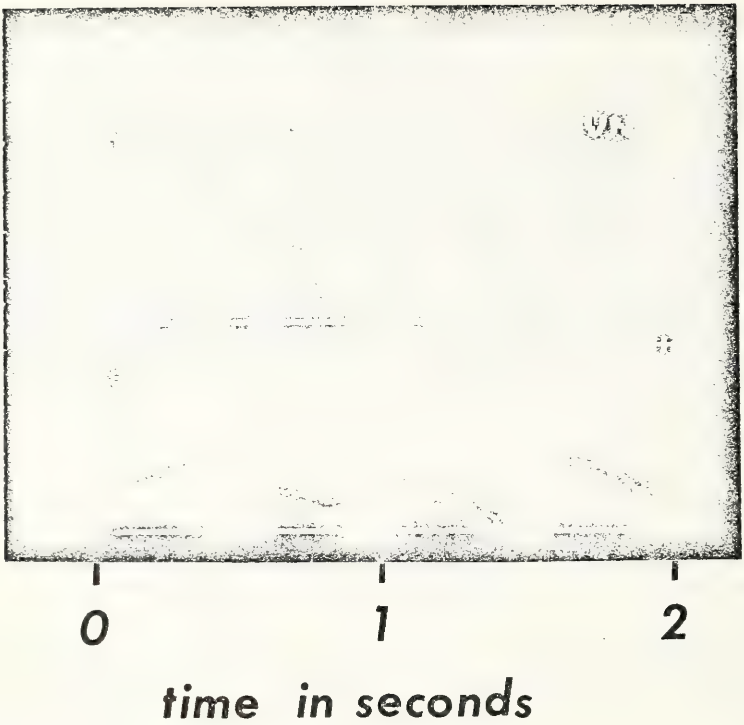

FIG. 2.—An example of a graphical display. This particular display shows voicing and nasality (VN) as functions of time. The upper tracing (T) is the teacher's model. The lower tracing (S) is the student's attempt at imitation. The solid lines show voicing. The dotted lines show nasal vibration. In the example above, the phrase spoken is "I caught no fish," with the stress on "no." This example clearly shows the defective durational features of the student's utterance as well as the nasalization of all his vowels.

Evaluation

Since September, 1972, Clarke School for the Deaf and BBN have conducted a joint program of evaluation. The aims of this have been to determine some of the potentials and limitations of this system and to provide input for its further development. The equipment has been installed in a special teaching room and remedial speech work is carried out by two teachers who spend half their time on this project and half in the classroom. Students are seen for 20 minutes per day for periods of 7, 14, 21, or 28 weeks. At any one time, eight students are receiving speech training, the computer system being used as a teaching tool.

Personnel

Day to day instruction of students is clearly the responsibility of the two research teachers. However, they are supported by the speech coordinator and research director at Clarke School, and by Drs. Nickerson and Stevens of BBN, the co-principal investigators. Selection of subjects, planning of remedial work and evaluation of progress are the responsibility of this group of six people. In addition, periodic

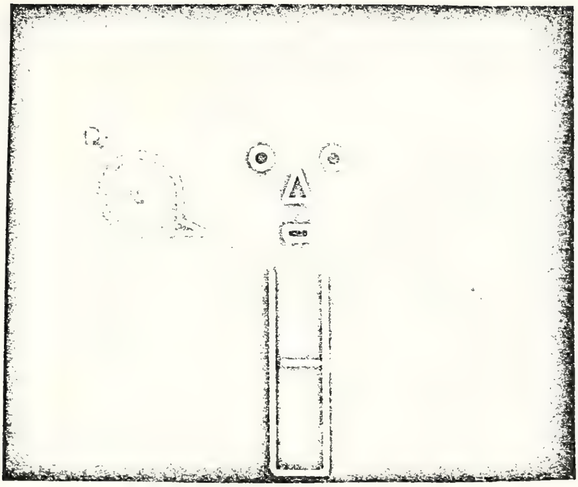

FIG. 3.—A cartoon display designed primarily for motivation of younger children. The size of the mouth gives an indication of loudness, and the "balloon" responds to either /s/ or /z/. There is also a movable "Adam's apple" (not shown on this photograph) to indicate pitch.

meetings are held with the regular speech teachers of the students involved, to inform them of the nature of the work being done, to solicit their guidance, and to facilitate carry over.

Initial results

During the 1972–73 academic year, 24 students between the ages of 8 and 17 received training via the system. Every student made some progress in the sense of acquiring limited speech skills in the context of the training situation. A few were considered by their tutors to have made considerable progress in the sense that they learned to perform speech activities which were very difficult compared with their performance at the beginning of training.

Controlled speech samples were collected at 7-week intervals during training. At the time of writing, these data have not been analyzed. There are, however, some trends which emerge from our observations so far. These indicate that the system and programs, as they currently exist, are very suitable for work on timing, pitch and velar control. It further appears that the age range 12 to 13 years may be optimal for the type of training used in this study, and that students with some residual hearing respond better than those without.

C. TEACHER/RESEARCHER INTERACTION

Perspective

There is, of course, nothing new in the concept of using visual displays in speech teaching. (See for example Volume 113 of the *American Annals of the Deaf.*) The use of a computer for this purpose is new, but basicaly this only adds operational convenience and flexibility. What I believe is worth noting about this project is the level and type of teacher/researcher interaction. This has resulted in the researchers learning more about the speech of the deaf and the teachers learning more about the acoustics of speech. Moreover, the interactive process has provided input for further development of the computer based system.

Activities of teachers and researchers

To facilitate discussion of interaction, it is perhaps worth considering first what researchers and teachers actually do. This is illustrated in Fig. 4. First a researcher attempts to explain an observed phenomenon by some theory or hypothesis. He then conducts an experiment in order to test his hypothesis. The results of the experiment are incorporated into his thinking and so the cycle continues. Occasionally the results of his thinking and experimentation are published, usually in a form suitable for other researchers.

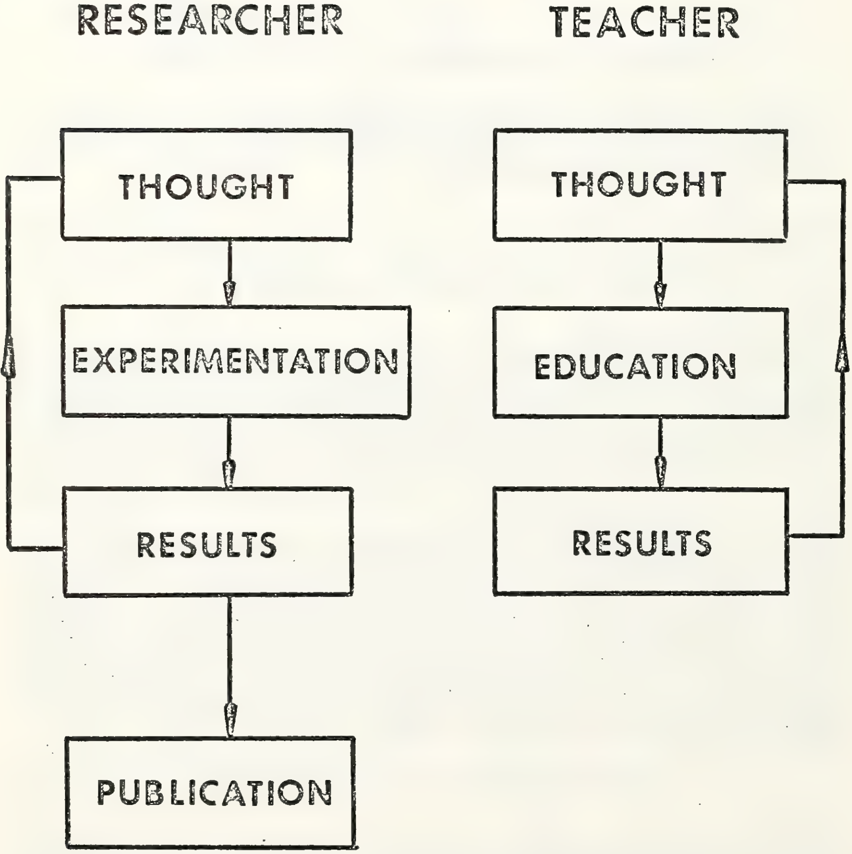

Fig. 4.—Illustrating the activities of the researcher and the teacher. The researcher attempts to explain some observed phenomenon and carries out experiments to test his hypothesis. The results of these experiments are used to modify his hypothesis and the cycle continues. This is the traditional "scientific method." The teacher also brings thought to bear on the problems of education and modifies his methods on the basis of results. Similarities and differences between these activities are discussed in the text.

The teacher's activities are in some ways similar. He gives thought to the task of education, and applied methods in the classroom. He measures results by the attainments of his students, and as he builds experience, he modifies his methods accordingly.

Contrasts

While there are similarities between the activities of the researcher and the teacher, there are also differences. For example, the researcher generally tries to select and minimize the number of variables involved in his studies. The teacher cannot do this, but must deal with the variables which are presented to him. For example, a researcher may choose to investigate the effect of volume compression in children's hearing aids. The teacher may be more concerned with broken cords, dead batteries, lost earmolds, or students who refuse to wear hearing aids at all.

Another difference lies in the evaluation process. While the researcher relies on experimental design and statistical procedures to maintain objectivity, the teacher is often obliged to assess his results in subjective terms, though hopefully, he too will make use of such standardized tests as are available.

Applied research

If the efforts of the researcher are to be of any value in the classroom, his basic research has to be followed by applied research. This cannot usually be done by the researcher since he is seldom also a teacher, or by the teacher, since he is seldom also a researcher. Clearly this type of research must be a joint venture involving interaction between the two.

One model for such interaction would involve the teacher reading the researcher's publications and applying the findings in the classroom. But few teachers have the necessary background to interpret research reports. Moreover, many of the conclusions which appeared so logical under the controlled conditions of the research laboratory may be sheer nonsense in the context of a real-life classroom.

A model of teacher/researcher interaction

A more effective model might be that of Fig. 5. The diagonal lines are intended to suggest that the researcher address himself directly to the teacher, either in teacher oriented publications, in-service training programs, or by direct contact, and that he expose himself to the educational process. In this way, he may increase his chances of asking the right questions.

The horizontal lines are intended to suggest that dialogue should occur between researchers and teachers, not so that the one can tell the other what should be done, but so that they may share and exchange information and viewpoints.

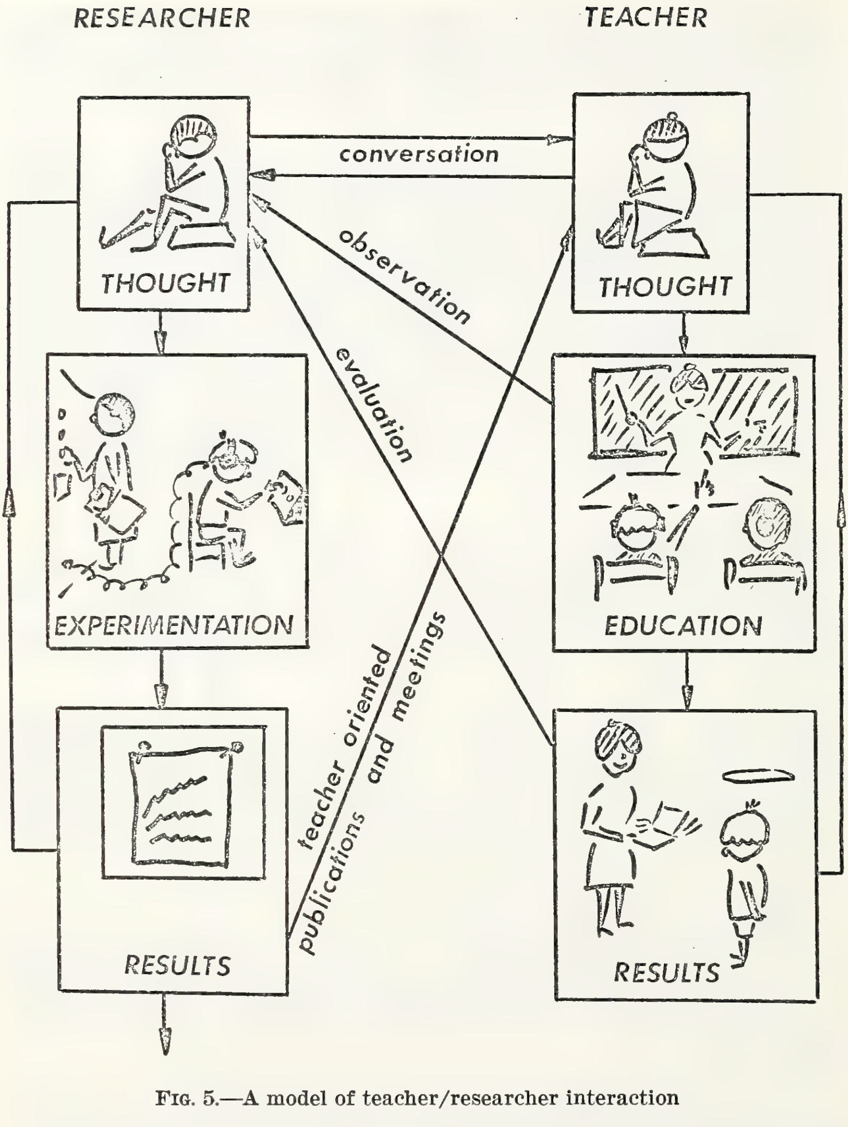

FIG. 5.—A model of teacher/researcher interaction

I believe that the evaluation project, described earlier, is an example of the type of interaction shown in Fig. 5. During the planning stages, the principal investigators visited Clarke School, sat in on classes, and discussed the project with members of the teaching staff. Before evaluation began, the research teachers spent a week in seminars and discussions with the designers and programmers. Since the beginning of the evaluation, the research personnel have observed teaching and met weekly with the teachers. The teachers have often left these meetings with ideas for new techniques, and the researchers have left them with ideas for experimentation.

An example of such mutual stimulation concerns voice quality. One of the experimental students was described as having very nasal speech. When she was taught to produce non-nasal vowels, it was obvious that the quality of her voice showed negligible improvement, and that nasality was not in fact the chief cause of her unnatural sounding voice. This then raised the question of whether there were any measurable acoustic characteristics of the so called "deaf voice" which might be used in a training display. Dr. Stevens carried out some measurements with deaf and hearing children and determined that there were indeed measurable differences in the relative amounts of low frequency energy. This information was then used in a display of voice quality which is currently being employed with one of the experimental subjects.

D. SUMMARY AND CONCLUSION

The problems of teacher/researcher interaction are not new, nor are suggestions for solving them (e.g. Kopp, 1938; Børrild, 1968). Moreover, the model presented in this paper is idealistic in that it ignores such limitations as personality, time, finance, etc. If, however, it can serve as a basis for thought and discussion, then perhaps it will have served a useful purpose.

The following suggestions are offered as ways of facilitating applied research in education of the deaf:

(1) would-be researchers should first observe the educational process. In this way, they may increase their understanding of the problem and their chances of asking appropriate research questions.

(2) researchers and teachers should maintain contact through mutually instructive dialogue.

(3) significant research findings should be communicated not only to other researchers, but also to teachers—either through journals, professional meetings, or in-service training programs.

One way to encourage the type of interaction recommended above is to establish research facilities within schools for the deaf (Boothroyd, 1971). Another is to establish collaboration between educational institutions and research organizations. The structure within which the interaction occurs is not important, but it is important that such interaction takes place.

Acknowledgments

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A STUDY OF THE RELATIONSHIP BETWEEN THE ARTICULATION AND VOCABULARY OF HEARING IMPAIRED PARENTS AND THEIR NORMALLY HEARING CHILDREN

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Chapter I—Introduction

During a recent, well-published California court case (21:1), a profoundly deaf couple was denied the right to adopt a normally hearing child. The grounds for the denial were that the home environment would be detrimental or "unnatural" and would not permit "normal" speech and language development. (19:7–8) (21:1) In other court cases deaf adults have lost custody of their children on the grounds that the home environment would not allow for normal speech and language development. (8:86–90)

In many States, applications for adoption must first be approved by some local social welfare agency. Such agencies are often overloaded with applications and may sometimes tend to reject applications on a rather arbitrary basis. The hearing impaired parent often discovers that his application for adoption is not being given serious consideration.

This investigator is personally aware of several such incidents. Most of these attempts at adoption have been thwarted at the level of the local adoption authorities. A search by this investigator has revealed only two hearing impaired couples in the Northwest region of the United States who have successfully adopted normally hearing children. In each case, the infant was obtained through the assistance of a local clergyman. After extensive investigation, the author has yet to discover a hearing impaired couple who has successfully adopted a child by contacting local adoption agencies and by following customary procedures.

I. THE PROBLEM

Importance of the study.—A thorough search of the literature revealed no previous studies of the language and speech development of normally hearing children of hearing impaired parents. Thus, the assumptions made by the court appear to be based upon unfounded generalizations rather than on definitive research studies.

Related research data indicate that language is learned primarily by imitation and that parents are the primary language model for their children. (7:232–235,242,254) (10:240–244,139) The studies of children from language starved home environments indicate the detrimental effect of poor linguistic models. (3:45–50) (13:20–29,251–258) (15:10–12) (18:5,8) Thus, it would seem possible that normally hearing children of hearing impaired parents might have difficulty in the development of speech and language.

Since no studies have been uncovered, this investigator proposed to explore the effect of the language environment provided for normally hearing children by hearing impaired parents. Two aspects of language, articulation and vocabulary, were studied.

Statement of the problem.—Is there a relationship between the articulation and vocabulary of hearing impaired parents and their normally hearing children?

Hypothesis.—The null hypothesis was postulated.

Assumptions.—The Templin-Darley Screening Test of Articulation (TDST) is a valid, reliable, and suitable measure of the articulation of hearing impaired parents and their normally hearing children. (12:13–16) The Peabody Picture Vocabulary Test (PPVT) is a valid, reliable, and suitable measure of the subject's verbal intelligence through a measurement of his vocabulary. (2:25–42)

Description of sample.—The sample investigated comprised normally hearing children and their hearing impaired parents. Children aged three through fifteen were tested. A total of 62 children were tested. Fifty-six were used as subjects for the investigation. This number represents a high percentage of the total number of possible subjects available in the geographic area of metropolitan Portland, Salem, and Eugene, and Vancouver, Washington. Children with an apparent physical, mental, or psychological impairment were excluded.

Description of the tests.—The 50-item TDST includes the speech elements of the English language which best discriminate between good and poor articulators. (12:13–15) The various sound elements tested included consonants, vowels, and dipthongs.

Extensive data concerning the test norms for each age level and sex, test procedures, test presentation, test forms, scoring, interpretation, test construction, test standardization, the establishment of norms, test reliability, test validity, and suitability are included in the instruction manual. (12:1–19)

In the use of norms, entries for eight-year-old children applied to all children older than eight since cross-sectional studies indicate that development towards accurate articulation of speech sounds is completed for most children by the age of eight. (12: 8) (11: 6)

The PPVT is designed to provide an estimate of the subject's verbal intelligence through a measurement of his vocabulary. (2: 25)

Extensive information concerning test construction, test standardization, establishment of norms, test procedures, scoring, derived scores, test interpretation, test forms, reliability, validity, and suitability is found in the test manual. (2: 25–42)

In addition to the standard test procedures, the investigator presented the Vocabulary Test words to the hearing impaired parents by the use of the manual alphabet and word cards.

Method.—After the children and parents to be investigated had been located, the parents were contacted and a time set for an interview and the presentation of the test battery. A copy of the introductory letter is included as Appendix A, and a copy of the interview schedule as Appendix B.

To gain proficiency in the presentation and scoring of the tests, the investigator presented the test battery to several adults and several children of varying ages. After the parents had supplied all necessary census data, each parent and child was presented with the following tests: (1) the TDST; (2) the PPVT. The test battery was presented to the subjects at their place of residence. The maximum time needed to present the test battery to each subject was 45 minutes. The test battery was presented to all subjects during a six-week period of time.

The investigator is a charter member of the National Registry of Interpreters and Translators of the Deaf, and is fully qualified to test deaf adults who communicate primarily through the use of the language of signs.

The investigator audio-taped each articulation test as it was presented to the subject. Each articulation test was then scored by an individual who is nationally certified as a speech pathologist and teacher of the deaf, and also by a person who had no training or experience in speech pathology or as a teacher of hearing impaired children. Research studies indicate that there is no significant difference in the speech test scores obtained by untrained and inexperienced and those obtained by trained and experienced articulation examiners on the TDST. (20:28–35)

To establish the reliability of the scoring of the test, the scores obtained by the two articulation test examiners were correlated. The correlation computed was found to be .97. The results of the speech pathologist were used in the final statistical calculations.

Analysis.—To test the null hypothesis, the following zero-order and multiple correlations were calculated for the TDST and PPVT.

1. Zero-order correlations:
    - (a) Hearing impaired fathers vs normally hearing sons
    - (b) Hearing impaired fathers vs normally hearing daughters
    - (c) Hearing impaired fathers vs normally hearing children
    - (d) Hearing impaired mothers vs normally hearing sons
    - (e) Hearing impaired mothers vs normally hearing daughters
    - (f) Hearing impaired mothers vs normally hearing children
2. Multiple correlations:
    - (a) Hearing impaired parents vs normally hearing sons
    - (b) Hearing impaired parents vs normally hearing daughters
    - (c) Hearing impaired parents vs normally hearing children

The .01 level of confidence was used to reject the null hypotheses. The table value for r (14:424) and $\bar{R}_c$ (6:581) at the .01 level of significance was used to test the significance of the obtained r and R_c, against the null hypotheses.

Differences between the means were tested by "t" tests for non-correlated samples. The .01 level was considered adequate for rejection of the null hypothesis.

Limitations of the study

1. This investigation was limited to a small number of normally hearing children and their hearing impaired parents who reside in the States of Oregon and Washington.

2. Only children from the ages of three to fifteen were included in this study.

II. DEFINITION OF TERMS

The terms used in this study are those common to educational literature. Only those terms with specific meanings in this study are listed.

Audiogram means the printed form used to calculate a hearing level determined by an audiometer.

Audiometer means an instrument used to measure auditory acuity and discrimination.

Audiometric test means a test of auditory acuity and discrimination.

Ceiling means the item on the PPST that comprises the subject's sixth mistake out of eight presentations.

Deaf means those whose hearing loss has precluded the normal development of language and whose sense of hearing is nonfunctional for the ordinary purposes in life. (9:3–4)

Deafened means a profound hearing loss that occurs subsequent to the age at which the use of language is retained, after approximately five years of age. (9:6)

Deafness means a loss of auditory acuity or discrimination.

Fingerspelling or the manual alphabet means a visual representation of the letters of the English alphabet produced by the fingers of one hand.

Hard-of-hearing means those having a hearing loss but in whom normal language acquisition has not been precluded. (9:4)

ISO means the International Standards Organization which is the international body of individuals that has determined the standard reference level by which all audiometers are calibrated.

Language means a potentially self-reflexive, structured system of symbols which catalog the objects, events, and relations in the world. (1:7)

Language of signs means the gesture language used by the deaf. The hands, fingers, arms, body, and facial expression are utilized to present a visual image of an object, person, or an action.

National Registry of Interpreters and Translators for the Deaf refers to the organization that has established performance standards and certifies individuals as qualified interpreters and translators of the deaf.

Profoundly deaf means those who have hearing levels of 80 decibels or greater in the better ear as measured by a pure tone test using a clinical audiometer calibrated to the ISO standard.

Verbal intelligence means intelligence measured by intelligence tests that require the knowledge of a formal symbolic language system to complete with validity.

III. ORGANIZATION OF THE STUDY

In this study the second chapter contains the review of the literature. It is divided into two parts: studies of normally hearing children of deaf parents and legal action affecting the adoption and custody of children by hearing impaired parents.

Chapter III contains the statistical analysis of the data.

The summary of the findings, conclusions and recommendations for further research are found in Chapter IV. This is followed by the Bibliography and Appendix.

Chapter II—Review of the Literature

The review of the literature is divided into two sections. The first part deals with studies directly pertaining to normally hearing children of hearing impaired parents. The second section of the review of the literature deals with legal action concerning the custody and adoption of children by hearing impaired parents.

I. STUDIES OF NORMALLY HEARING CHILDREN OF DEAF PARENTS

There is a dearth of studies dealing directly with the normally hearing children of hearing impaired parents. An exhaustive review of the literature has revealed only one study related to the population group investigated, completed by Critchley in 1967 (17:274–280) The investigation studied speech delay and other communication difficulties encountered by hearing children in a deaf environment. Critchley studied in detail three normally hearing children raised in a deaf environment. The first child showed many of the articulation patterns found among the deaf. He did not attend school before the age of five years and had copied the pronunciation of the other members of the family. The child had some reading delay during the first year at school. The second child went to a nursery school at an early age and most of the educational difficulties that he might have experienced had already been overcome. The third child spelled exceptionally well. Critchley believes that this is not unusual among hearing children of deaf parents. He stated that the spelling of non-deaf children brought up to fingerspell is likely to be more accurate than the spelling of their deaf siblings.

II. LEGAL ACTION AFFECTING THE ADOPTION AND CUSTODY OF CHILDREN BY HEARING IMPAIRED ADULTS

The courts have arbitrarily assumed that hearing impaired parents will have a detrimental effect on the growth and development of their normally hearing children. A case in point is Howard vs. Ragsdale. (8:86–90) In this case the court held that normally hearing siblings would be better off living in a public institution than with their hearing impaired mother.

The hearing impaired parents separated, and their three children were placed in a public institution. After several years the mother initiated legal proceedings to secure the release of her children from the institution. The Kentucky court denied custody to her on the grounds that returning to a deaf-mute environment after so long a time would be detrimental and cause great communication difficulties for the children. Therefore, the children were left in the public institution. (8:86–90)

The Christensen adoption case is another prime example of a court case concerned with the ability of hearing impaired parents to provide a proper language environment for their children. A superior court judge in the County of Los Angeles denied the adoption of a nine-month-old boy by Mr. and Mrs. Wayne Christensen. The grounds for the denial were that the environment provided was not "normal" because the parents were deaf and communicated only by the use of the language of signs. The judge felt that this situation would not allow the child to develop naturally, thus retarding or disturbing the child's intellectual, linguistic, and emotional growth. (24:1) A retrial was held before the same judge. Again the adoption was denied despite overwhelming data in the form of personal narratives of individuals whose parents were deaf. Reports of educators, child psychiatrists, psychologists, and adoption agency personnel supported this point of view. (23:1) (21:1) The case was carried to the Supreme Court of

California and the verdict of the judge was overruled. (22:1) Finally, after the lengthy and costly legal battle, a new adoption hearing was held and the adoption of the child was allowed. (19:7–8)

In summary, there is a dearth of literature and research studies dealing with normally hearing children who have hearing impaired parents. Only one such study was uncovered. Hearing impaired adults have lost custody of their children and have had little success in adopting children on the grounds that deafness is detrimental to the normal growth and development of their children. The review of the literature clarifies the urgent need for this investigation.

Chapter III—Analysis of Data

The purpose of this study was to investigate the relationship between the articulation and vocabulary of normally hearing children and their hearing impaired parents. T tests of the significance of the difference between the means and zero-order and multiple correlations between the two groups on the Templin-Darley Screening Test of Articulation (TDST) and the Peabody Picture Vocabulary Test (PPVT) were calculated. Null hypotheses were postulated for each of the t tests and the correlations investigated. (Table 1.)

TABLE 1.—ZERO-ORDER AND MULTIPLE CORRELATIONS OF HEARING IMPAIRED PARENTS AND THEIR NORMALLY HEARING CHILDREN

TEMPLIN-DARLEY SCREENING TEST OF ARTICULATION

Children	Hearing impaired parents		
	Fathers X_4	Mothers X_5	Fathers and mothers $(X_{4.5})$
Normally hearing children:			
Sons X_1	$r_{x_1x_4}$	$r_{x_1x_5}$	$r_{x_1x_{4.5}}$
Daughters X_2	$r_{x_2x_4}$	$r_{x_2x_5}$	$r_{x_2x_{4.5}}$
Children X_3	$r_{x_3x_4}$	$r_{x_3x_5}$	$r_{x_3x_{4.5}}$

PEABODY PICTURE VOCABULARY TEST

Children	Hearing impaired parents		
	Fathers X_9	Mothers X_{10}	Fathers and mothers $(X_{9.10})$
Normally hearing children:			
Sons X_6	$r_{x_6x_9}$	$r_{x_6x_{10}}$	$r_{x_6x_{9.10}}$
Daughters X_7	$r_{x_7x_9}$	$r_{x_7x_{10}}$	$r_{x_7x_{9.10}}$
Children X_8	$r_{x_8x_9}$	$r_{x_8x_{10}}$	$r_{x_8x_{9.10}}$

I. SAMPLE

The original sample investigated was composed of 62 children and their hearing impaired parents. The subjects reside in the Portland metropolitan area, Salem, Eugene, and Vancouver, Washington. Six of the children were not included in the calculation of the coefficient of correlation. Two of the six children had obvious hearing impairments, one was too young, two did not have a hearing impaired father, and the sixth child possessed undetermined emotional or psychological disorders.

Children.—As shown in Table 2, children between the ages of three and fifteen were tested. There were 29 females and 27 males. Table 3 shows the highest grade completed.

TABLE 2.—AGES OF CHILDREN AT THE TIME OF THE PRESENTATION OF THE TEST BATTERY

Age	Male		Female		Total	
	Number	Percent	Number	Percent	Number	Percent
3 to 3.11	1	3.7	0	0	1	1.8
4 to 4.11	4	14.8	4	13.4	8	14.3
5 to 5.11	4	14.8	4	13.4	8	14.3
6 to 6.11	3	11.1	2	6.9	5	8.9
7 to 7.11	3	11.1	4	13.4	7	12.5
8 to 8.11	3	11.1	4	13.4	7	12.5
9 to 9.11	3	11.1	2	6.9	5	8.9
10 to 10.11	1	3.7	5	17.2	6	10.7
11 to 11.11	1	3.7	2	6.9	3	5.4
12 to 14.11	4	14.8	2	6.9	6	10.7
Total	27		29		56	

TABLE 3.—HIGHEST GRADE, LEVEL COMPLETED BY THE CHILDREN INCLUDED IN THE STUDY

Grade level	Male		Female		Total	
	Number	Percent	Number	Percent	Number	Percent
Pre-school age	8	29.6	5	17.2	13	23.2
Kindergarten	4	14.8	4	13.4	8	14.3
Grade:						
1	2	7.4	5	17.2	7	12.5
2	4	14.8	3	10.3	7	12.5
3	3	11.1	3	10.3	6	10.7
4	1	3.7	2	6.9	3	7.5
5	1	3.7	5	17.2	6	10.7
6	2	7.4	0	0	2	3.6
7	0	0	0	0	0	0
8	1	3.7	2	6.9	3	5.4
9	1	3.7	0	0	1	1.8
Total	27		29		56	

The children used as subjects of the investigation were also asked to state the average number of hours per day they watched television, and the average number of hours they associated with hearing individuals. The answers received from all of the children were very similar; thus, these questions were not pursued further.

Thirteen of the children tested had not yet entered school. The remainder of the children were in grades kindergarten through ninth.

Parents.—Fifty-four hearing impaired parents were tested. They were asked to categorize the degree of their hearing impairment into one of the following classifications: mild, moderate, severe, or profound. The classification system is defined in Appendix C. Table 4 depicts the number of parents in each classification.

TABLE 4.—THE DEGREE OF HEARING IMPAIRMENT OF THE PARENTS

Degree of hearing impairment	Male		Female		Total	
	Number	Percent	Number	Percent	Number	Percent
Mild	0	0	0	0	0	0
Moderate	1	3.7	3	11.7	4	7.4
Severe	6	22.2	7	25.9	13	24.1
Profound	20	74.1	17	63.0	37	68.5
Total	27		27		54	

II. RELIABILITY OF THE SCORING ON THE ARTICULATION TEST

This investigator audio-taped the TDST as it was presented to each subject. The articulation tests were then scored from the audio-tapes by an individual who is certified as a speech pathologist and as a teacher of the deaf. She had several years' experience in each profession and had presented the TDST on several occasions.

To insure the reliability of the scoring of the test, a second individual was asked to listen to the audio-tapes and to score the tests. This individual had no previous experience or training as a speech pathologist or as a teacher of the deaf, and had never presented an articulation test previously. Research studies conducted on the TDST have determined that no training is required to conduct this test. (20:28–35) The only requirements for success in using the test are normal hearing and speech. When compared, the test scores obtained by highly trained professional and unskilled laymen show no significant difference.

The coefficient of correlation between the scoring of the two examiners was then computed. The r was found to be .97. The extremely high r provides evidence of the reliability of the scoring of the speech tests.

III. COMPARISON OF MEANS AND STANDARD DEVIATIONS

The means and standard deviations of the Articulation (TDST) and Vocabulary (PPVT) tests were:

	TDST			PPVT	
	N	Mean	S.D.	Mean	S.D.
Daughters	29	2.986	3.758	2.086	12.175
Fathers of daughters	29	−24.110	−25.141	−26.862	−15.517
Mothers of daughters	29	14.469	14.470	27.190	22.151
Sons	27	2.996	7.778	1.074	10.017
Fathers of sons	27	−22.392	12.601	−24.740	21.348
Mothers of sons	27	−23.092	17.717	−18.740	27.450
Children	56	2.971	5.982	1.598	11.098
All fathers	54	−23.282	13.505	−25.839	24.351
All mothers	54	−24.153	16.002	−17.071	24.670

"t" TEST RESULTS	N	TDST	PPVT	0.01 level
Fathers with daughters	29	10.443	6.411	2.756
Fathers with sons	27	13.306	7.115	2.771
Fathers with children	54	16.237	9.472	2.682
Mothers with daughters	29	10.839	5.122	2.756
Mothers with sons	27	8.515	4.028	2.771
Mothers with children	54	13.686	6.340	2.682

Note: All of the "t" tests are significant at far below the 0.01 level. In all cases, the children are far better than the parents.

IV. ZERO-ORDER AND MULTIPLE CORRELATIONS

Using Tables 16 to 21, inclusive, zero-order and multiple correlations were computed between standard scores.

1. The first set of hypotheses tested was that all of the correlations listed in Table 1 concerning the TDST (Articulation) did not differ from zero at the .01 level of significance. The results are given in Table 5.

TABLE 5.—ZERO-ORDER AND MULTIPLE CORRELATIONS ON THE TEMPLIN-DARLEY SCREENING TEST OF ARTICULATION

		Hearing-impaired parents		
		Fathers (N=27)	Mothers (N=27)	Parents (N=54)
Normally hearing children:				
Sons	27	−0.3629	−0.2738	0.24495
Daughters	29	−.4640	[1] −.4823	.26077
Children	56	[1] −.3849	[1] −.3416	[1] .34205
Fathers	27		[1] .9016	

[1] Significant at the 0.01 level of confidence.
Note: See table 7 for the 0.01 level of significance.

Of the nine correlation coefficients, the following five were not significant, that is, the probability is zero correlations.

Zero-order:

Fathers and sons	−0.3629
Fathers and daughters	−0.4640
Mothers and sons	−0.2738

$\overline{R}_c$:

Parents and sons	0.24495
Parents and daughters	0.26077

The null hypothesis of zero correlation cannot be rejected. Four were significant:

Daughters with mothers	−0.4823
Children with fathers	−0.3849
Children with mothers	−0.3416

This indicates that the higher the score for one group, the lower it is for the other, and vice versa. The fourth is the multi−$\overline{R}_c$ (.34205) between children and parents, indicating a correlation greater than zero. Since the R_c is always positive, the direction is not indicated.

2. The second set of hypotheses tested was that all of the correlations listed in Table 1 concerning the PPVT did not differ from zero at the .01 level of significance. The results are presented in Table 6. All of the correlations were not significant.

TABLE 6.—ZERO-ORDER AND MULTIPLE CORRELATIONS ON THE PEABODY PICTURE VOCABULARY TEST

		Hearing impaired parents		
	N	Fathers (N=27)	Mothers (N=27)	Parents (N=54)
Normally hearing children:				
Sons	27	0.0292	0.2962	0.27010
Daughters	29	.1153	.2578	.14117
Children	56	.0814	.2706	.26224
Fathers	27		.8025*	

Note: See table 7 for the 0.01 level of significance.
* Significant at the 0.01 level of confidence.

TABLE 7.—SIGNIFICANCE AT THE 0.01 LEVEL OF CONFIDENCE FOR THE ZERO-ORDER AND MULTIPLE CORRELATIONS ON THE TEMPLIN-DARLEY SCREENING TEST OF ARTICULATION AND THE PEABODY PICTURE VOCABULARY TEST

		Hearing impaired parents		
	N	Fathers (N=27)	Mothers (N=27)	Parents (N=54)
Normally hearing children:				
Sons	27	0.487	0.487	0.538
Daughters	29	.470	.470	.522
Children	56	.342	.342	.316
Fathers	27		.487	

Note: Significant at 0.01 level of confidence for zero-order correlation (14:424). Significant at 0.01 level of confidence for multiple correlation (6:581).

3. On both tests, the zero-order correlation between fathers and mothers was significant at the .01 level. The null hypothesis was rejected. See Tables 5 and 6.

Chapter IV—Summary and Conclusions

The identification of environments that are detrimental to the normal language development of children has been a vital concern of educators during recent years. In recent court cases the assumption has been made that hearing impaired parents have a detrimental effect upon the language development of their normally hearing children. An exhaustive search of the literature has uncovered no previous research that supports this contention. This exploratory study was completed to assist in meeting the need that exists for evidence that will uphold or dispute the assumptions of the court.

The purpose of this exploratory study was to investigate the relationship between the articulation and vocabulary of hearing impaired parents and their normally hearing children.

I. METHOD

The Templin-Darley Screening Test of Articulation (TDST) and the Peabody Picture Vocabulary Test (PPVT) were presented to 62 children and their hearing impaired parents. Six children were eliminated, leaving a final number of 56. Thirteen of the children had not yet entered school. The remainder of the children were in grades kindergarten through ninth. The children ranged in age from 3.6 to 14.11 years. The tests were presented to the hearing impaired parents and their normally hearing children within a six-week period of time at their place of residence. A maximum of 45 minutes was needed to present the test battery to each subject.

Differences between means were tested by "t" tests.

A correlation analysis and test of significance for the zero-order and multiple correlations obtained was the method used to analyze the data. The following combinations were investigated:

1. Zero-order correlations:
   - (a) Hearing impaired fathers versus normally hearing sons
   - (b) Hearing impaired fathers versus normally hearing daughters
   - (c) Hearing impaired fathers versus normally hearing children
   - (d) Hearing impaired mothers versus normally hearing sons

(e) Hearing impaired mothers versus normally hearing daughters

(f) Hearing impaired mothers versus normally hearing children

2. Multiple correlations:

(a) Hearing impaired parents versus normally hearing sons

(b) Hearing impaired parents versus normally hearing daughters

(c) Hearing impaired parents versus normally hearing children

The null hypothesis was postulated in each combination.

II. SUMMARY OF FINDINGS

On both the TDST and the PPVT, all "t" tests proved to be significant.

On the TDST the null hypothesis was rejected in the following combinations of correlations of hearing impaired parents and normally hearing children: fathers versus children, mothers versus daughters, mothers versus children, and parents versus children. The null hypothesis was accepted in the following combinations: fathers versus sons, fathers versus daughters, mothers versus sons, parents versus sons, and parents versus daughters. All of the zero-order correlations were found to be negative.

On the PPVT the null hypothesis was accepted for all combinations.

III. CONCLUSIONS

The "t" tests between the means of scores for parents and children were significant beyond the .001 level. There was less than one chance in one thousand that no true difference exists. The children were far better than the parents.

Statistically, the correlations were not significant between the vocabulary of hearing impaired parents and their normally hearing children. However, some of the correlations on the articulation test did show a significant negative relationship. The data revealed hearing impaired parents to be poor articulators and to be retarded in vocabulary, whereas their normally hearing children were found to be developing at the norm in the area of vocabulary and to be exceeding the norm in the area of articulation. A possible explanation of this interesting phenomenon might be that the children chose articulation models other than their hearing impaired parents. Many of the hearing impaired parents were concerned about the articulation of their children. They encouraged articulation experiences and the selection of alternative articulation models. The alternative model might be television, siblings or other adults.

The evidence gathered by this exploratory study seriously challenges the validity of the courts' assumptions concerning the detrimental or "unnatural" effect of hearing impaired parents upon the language development of their normally hearing children.

IV. RECOMMENDATIONS FOR FURTHER RESEARCH

1. Exploration of the factors affecting the articulation of the children of hearing impaired parents is recommended.

2. Replication of this study with a new sample from a different geographical area is recommended.

3. Further research on the effect of hearing impaired parents upon the social maturity, personality, and emotional development of their normally hearing children is suggested.

4. Other aspects of the receptive and expressive language of hearing impaired parents and their normally hearing children should be investigated.

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APPENDIX A

THE NUMBER OF OTHER SIBLINGS IN THE FAMILY OF EACH NORMALLY HEARING CHILD TESTED

TABLE 8.—MALE: NUMBER OF OTHER SIBLINGS IN FAMILY OF EACH SUBJECT

Male subjects	Male siblings	Female siblings	Hearing siblings	Deaf siblings	Male subjects	Male siblings	Female siblings	Hearing siblings	Deaf siblings
1	2	1	3	0	16	1	1	1	1
2	1	1	2	0	17	1	0	1	0
3	1	1	2	0	18	1	0	1	0
4	2	1	3	0	19	1	1	2	0
5	2	1	3	0	20	1	1	2	0
6	2	1	3	0	21	0	0	0	0
7	0	1	1	0	22	2	2	4	0
8	0	2	2	0	23	0	2	0	2
9	0	2	2	0	24	0	1	1	0
10	1	1	2	0	25	0	0	0	0
11	0	1	1	0	26	1	1	2	0
12	0	1	1	0	27	1	1	2	0
13	1	1	2	0					
14	1	2	3	0	Total	22	29	49	3
15	1	2	3	0					

TABLE 9.—FEMALE: NUMBER OF OTHER SIBLINGS IN FAMILY OF EACH SUBJECT

Female subjects	Male siblings	Female siblings	Hearing siblings	Deaf siblings	Female subjects	Male siblings	Female siblings	Hearing siblings	Deaf siblings
1	3	0	3	0	17	1	1	2	0
2	1	1	2	0	18	2	2	4	0
3	2	0	2	0	19	1	0	1	0
4	0	1	1	0	20	2	0	2	0
5	0	1	1	0	21	2	1	3	0
6	3	0	3	0	22	2	1	3	0
7	0	0	0	0	23	0	0	0	0
8	0	2	2	0	24	2	0	2	0
9	0	2	2	0	25	1	0	1	0
10	0	2	2	0	26	1	0	1	0
11	1	0	1	0	27	1	1	1	1
12	1	1	2	0	28	1	1	1	1
13	1	1	2	0	29	2	0	2	0
14	0	1	1	0					
15	0	1	1	0	Total	31	21	50	2
16	1	1	2	0					

APPENDIX B

Cause and Age of Onset of the Hearing Impairment of the Parents

TABLE 10.—CAUSE OF PARENTS' HEARING IMPAIRMENT

Cause	Male		Female		Total	
	Number	Percent	Number	Percent	Number	Percent
Unknown	8	29.6	7	25.9	15	27.8
Meningitis	4	14.8	3	11.1	7	13.0
Rubella	0	0	2	7.4	2	3.7
Influenza	0	0	3	11.1	3	5.6
Pneumonia	0	0	1	3.7	1	1.9
Measles	3	11.1	2	7.4	5	9.3
Hereditary	2	7.4	1	3.7	3	5.6
Infantile paralysis	0	0	1	3.7	1	1.9
High fever	2	7.4	1	3.7	3	5.6
Whooping cough	1	3.7	1	3.7	2	3.7
Scarlet fever	2	7.4	1	3.7	3	5.6
Ear infection	0	0	1	3.7	1	1.9
Mumps	0	0	1	3.7	1	1.9
Birth injury	2	7.4	1	3.7	3	5.6
X-ray	0	0	1	3.7	1	1.9
Head injury	1	3.7	0	0	1	1.9
Premature birth	1	3.7	0	0	1	1.9
Bronchitis	1	3.7	0	0	1	1.9
Total	27		27		54	

TABLE 11.—THE AGE OF THE ONSET OF THE DEAFNESS OF THE HEARING IMPAIRED PARENTS

Age of onset	Male		Female		Total	
	Number	Percent	Number	Percent	Number	Percent
Birth	10	37.8	9	33.3	19	35.2
0 to 1	6	22.2	5	18.5	11	20.4
1 to 2	7	25.9	4	14.8	11	20.4
2 to 3	0	0	2	7.4	2	3.7
3 to 4	3	11.1	2	7.4	5	9.3
4 to 5	0	0	0	0.0	0	0
5 to 6	0	0	2	7.4	2	3.7
6 to 7	0	0	1	3.7	1	1.9
7 to 8	0	0	1	3.7	1	1.9
8 to 9	0	0	0	0	0	0
9 to 10	0	0	1	3.7	1	1.9
10 to 11	0	0	0	0	0	0
11 to 12	0	0	0	0	0	0
12 to 13	1	3.7	0	0	1	1.9
Total	27		27		54	

APPENDIX C

Educational Level, Occupation, and Family Income of the Hearing Impaired Parents

TABLE 12.—EDUCATIONAL ATTAINMENT LEVEL OF THE HEARING IMPAIRED PARENTS

Educational level	Male		Female		Total	
	Number	Percent	Number	Percent	Number	Percent
Master's degree	3	11.1	0	0	3	5.6
Bachelor's degree	1	3.7	3	11.1	4	7.4
15th grade	1	3.7	0	0	1	1.9
14th grade	0	0	1	3.7	1	1.9
13th grade	2	7.4	3	11.1	5	9.3
12th grade	3	11.1	2	7.4	5	9.3
11th grade	2	7.4	0	0	2	3.7
10th grade	3	11.1	6	22.2	9	16.7
9th grade	9	33.3	8	29.6	17	31.5
8th grade	2	7.4	2	7.4	4	7.4
7th grade	0	0	1	3.7	1	1.9
6th grade	1	3.7	1	3.7	2	3.7
Total	27		27		54	

TABLE 13.—OCCUPATIONS OF THE HEARING IMPAIRED PARENTS

Occupation	Male		Female		Total	
	Number	Percent	Number	Percent	Number	Percent
Housewife	0	0	20	74.1	20	37.1
Printing	1	3.7	0	0	1	1.9
Manufacturing plant worker	6	22.2	3	11.1	9	16.7
Teacher	4	14.8	2	7.4	6	11.1
Tire recapper	1	3.7	0	0	1	1.9
Fork lift driver	1	3.7	0	0	1	1.9
Wood products industry	2	7.4	0	0	2	3.7
Electronics assembly	4	14.8	1	3.7	5	9.3
Draftsman	1	3.7	0	0	1	1.9
Dormitory counselor	1	3.7	1	3.7	2	3.7
Carpenter	1	3.7	0	0	1	1.9
Maintenance man	1	3.7	0	0	1	1.9
Electronics assembly inspector	2	7.4	0	0	2	3.7
Cannery worker	1	3.7	0	0	1	1.9
Engineer	1	3.7	0	0	1	1.9
Total	27		27		54	

TABLE 14.—FAMILY INCOME

Income per year	Families	
	Number	Percent
$14,000 plus	4	14.8
$13,000 to $14,000	0	0
$12,000 to $13,000	2	7.4
$11,000 to $12,000	2	7.4
$10,000 to $11,000	2	7.4
$9,000 to $10,000	2	7.4
$8,000 to $9,000	3	11.1
$7,000 to $8,000	5	18.5
$6,000 to $7,000	6	22.2
$5,000 to $6,000	1	3.7
Total	27	

APPENDIX D

Communication System Used by Family Members Tested

TABLE 15.—COMMUNICATION SYSTEM USED BY FAMILY MEMBERS TESTED

Family members	Manual		Oral		Combined		Total
	Number	Percent	Number	Percent	Number	Percent	
Mother to son	5	18.5	10	36.3	12	44.4	27
Mother to daughter	5	17.2	9	31.0	15	51.7	29
Father to son	7	25.9	5	18.5	15	55.5	27
Father to daughter	10	34.5	3	10.3	16	55.2	29
Son to mother	1	3.7	8	29.6	18	66.7	27
Son to father	1	3.7	5	18.5	21	77.8	27
Daughter to mother	0	0	5	17.2	24	82.8	29
Daughter to father	0	0	2	6.8	27	93.2	29
Mother to father	27	100.0	0	0	0	0	27
Father to mother	27	100.0	0	0	0	0	27

TABLE 16.—HEARING IMPAIRED PARENTS' TEMPLIN-DARLEY SCREENING TEST OF ARTICULATION RESULTS

Hearing impaired fathers	Raw score	Deviation scores	Hearing impaired mothers	Raw score	Deviation scores
1[1]	6	−41.8	1	21	−26.9
2	43	−4.8	2	44	−3.9
3	41	−6.8	3	34	−13.9
4	35	−12.8	4	48	+.1
5	50	+2.2	5	49	+1.1
6	20	−27.8	6	39	−8.9
7	7	−40.8	7	13	−34.9
8	21	−26.8	8	12	−35.9
9	26	−21.8	9	50	+2.1
10	35	−12.8	10	31	−16.9
11	30	−17.8	11	30	−17.9
12	45	−2.8	12	29	−18.9
13	38	−9.8	13	9	−38.9
14	20	−27.8	14	27	−20.9
15	37	−10.8	15	16	−31.9
16	15	−32.8	16	0	−47.9
17	11	−36.8	17	19	−28.9
18	17	−30.8	18	40	−7.9
19	14	−33.8	19	9	−38.9
20	3	−44.8	20	4	−43.9
21	5	−42.8	21	4	−43.9
22	12	−35.8	22	1	−46.9
23	32	−15.8	23	19	−28.9
24	16	−31.8	24	6	−41.9
25	15	−32.8	25	20	−27.9
26	20	−27.8	26	29	−18.9
27	39	−8.8	27	28	−19.9

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[1] Order of listing data: Father 1, mother 1, son 1 and/or daughter 1 belong to same family.

TABLE 17.—NORMALLY HEARING CHILDREN'S TEMPLIN-DARLEY SCREENING TEST OF ARTICULATION RESULTS

Normally hearing children	Son (S) or Daughter (D)	Raw score	Deviation scores
1[1]	D	40	5.8
2	D	49	14.8
3	S	46	7.5
3	D	50	2.1
3	D	48	13.8
4	S	48	13.7
5	D	49	1.2
5	S	46	11.3
6	D	50	2.2
6	S	50	15.3
7	D	44	−.3
8	S	50	2.2
9	D	50	2.1
9	S	36	1.7
10	D	50	2.1
10	S	49	1.2
11	D	34	−3.3
11	D	50	2.1
12	D	50	2.1
12	D	50	2.1
13	D	50	2.1
13	S	50	2.2
14	D	49	4.7
14	S	45	10.7
14	S	48	.2
15	D	50	2.1
15	S	50	2.2
15	S	50	2.2
15	S	48	13.3
16	D	49	1.1
16	D	49	8.4
17	D	50	2.1
17	D	50	2.1
17	D	50	5.7
18	D	50	2.1
18	S	50	2.2
19	D	50	2.1
19	D	50	2.1
19	S	49	14.7
20	D	50	2.1
20	S	50	2.2
21	D	50	2.1
21	D	48	.2
21	S	50	2.2
21	S	50	2.2
23	D	49	1.1
23	S	50	2.2
23	S	50	6.0
24	S	49	10.5
25	S	47	−.8
26	D	43	−1.3
26	S	50	2.2
26	S	12	−13.1
27	S	28	−6.7
27	S	48	4.0
Mean of sons			2.996
Mean of daughters			2.986
Standard deviation of sons			7.778
Standard deviation of daughters			3.758

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[1] Order of listing data: father, 1; mother, 1; son, 1; and/or daughter, 1 belong to same family.

TABLE 18.—HEARING IMPAIRED FATHERS' PEABODY PICTURE VOCABULARY TEST RESULTS

Hearing impaired fathers	Raw score	Percentile	IQ	Mental age	Deviation scores
1[1]	55	0	0	5-11	—54
2	110	53	101	18- 0	+1
3	90	13	81	12-11	—19
4	93	16	84	13-11	—16
5	134	94	125	18- 0	+25
6	85	4	76	12- 1	—24
7	74	0	65	9- 8	—35
8	72	0	63	9- 2	—37
9	113	62	104	18- 0	+4
10	106	42	97	17- 2	—3
11	70	0	61	8- 9	—39
12	135	94	126	18- 0	+26
13	114	64	105	18- 0	+5
14	72	0	63	9- 2	—37
15	104	37	95	16- 7	—5
16	53	0	0	5- 7	—56
17	57	0	0	6- 3	—52
18	56	0	0	6- 1	—53
19	87	8	78	12- 5	—22
20	60	0	0	6-10	—49
21	54	0	0	5- 9	—55
22	89	11	80	12- 9	—20
23	95	18	86	14- 6	—14
24	83	3	74	11- 4	—26
25	69	0	60	8- 7	—40
26	55	0	0	5-11	—54
27	80	2	71	10- 8	—29

[1] Order of listing data: Father 1, mother 1, son 1 and/or daughter 1 belong to same family.

TABLE 19.—HEARING IMPAIRED MOTHERS' PEABODY PICTURE VOCABULARY TEST RESULTS

Hearing impaired mothers	Raw score	Percentile	IQ	Mental age	Deviation scores
1[1]	59	0	0	6- 8	−52
2	85	3	74	11- 7	−26
3	90	9	79	12- 8	−21
4	134	92	124	18- 0	+23
5	128	86	118	18- 0	+17
6	116	63	106	18- 0	+5
7	83	2	72	11- 0	−28
8	98	22	87	14- 8	−13
9	137	96	127	18- 0	+26
10	132	91	122	18- 0	+21
11	95	16	84	13-11	−16
12	115	61	105	18- 0	+4
13	112	54	101	18- 0	+1
14	61	0	0	7- 0	−50
15	60	0	0	6-10	−51
16	82	1	71	10-10	−29
17	86	4	75	11-11	−25
18	122	78	112	18- 0	+11
19	103	31	92	16- 1	−8
20	61	0	0	7- 0	−50
21	85	3	74	11- 7	−26
22	103	34	92	16- 1	−8
23	117	66	107	18- 0	+6
24	78	0	67	10- 4	−33
25	93	13	82	13- 4	−18
26	52	0	0	5- 6	−59
27	87	5	76	12- 2	−24

[1] Order of listing data: Father 1, mother 1, son 1 and/or daughter 1 belong to same family.

TABLE 20.—NORMALLY HEARING SONS' PEABODY PICTURE VOCABULARY TEST RESULTS

Normally hearing sons	Raw score	Percentile	IQ	Mental age	Deviation scores
3 [1]	45	0	69	4- 5	−16.0
4	55	48	99	5-11	−.5
5	45	38	99	4- 5	−.5
6	52	56	103	5- 5	+2.0
8	104	72	108	16- 7	+7.0
9	59	94	123	6- 8	+13.5
10	79	80	113	10- 7	+8.0
13	97	98	133	15- 1	+21.5
14	54	8	79	5- 9	−12.0
14	36	12	83	3- 6	−9.5
15	65	50	99	7-10	−1.0
15	69	44	96	8- 7	−2.0
15	55	71	109	5-11	+5.0
18	95	97	130	14- 6	+19.5
19	49	68	106	4-11	+3.5
20	104	82	113	16- 7	+11.0
21	96	72	103	14-10	+5.0
21	64	24	88	7- 8	−7.0
22	60	49	98	6-10	−1.0
23	84	50	99	11- 9	−.5
23	51	8	81	5- 2	−10.0
24	50	24	89	5- 1	−5.5
25	94	88	118	14- 3	+12.0
26	66	31	91	8- 0	−5.0
26	15	0	68	2- 3	−20.5
27	66	74	110	8- 1	+5.0
27	55	71	109	5-11	+5.0
Mean					1.074
Standard dev					10.017

[1] Order of listing data: Father 1, mother 1, son 1 and/or daughter 1 belong to the same family.

TABLE 21.—NORMALLY HEARING DAUGHTERS' PEABODY PICTURE VOCABULARY TEST RESULTS

Normally hearing daughters	Raw score	Percentile	IQ	Mental age	Deviation scores
1 [1]	26	2	63	2-10	−19.0
2	55	95	122	5-11	+13.0
3	55	8	81	5-11	−11.0
3	39	18	88	3- 9	−6.0
5	66	74	110	8- 0	+5.0
6	64	67	106	7- 7	+3.0
7	59	24	88	6- 8	−7.0
9	95	99	138	13-11	+23.5
10	81	71	108	10- 9	+5.0
11	106	97	131	16-10	+23.0
11	59	98	127	6- 8	+14.0
12	102	94	126	15- 9	+19.0
12	70	66	107	8- 9	+4.0
13	98	91	120	14- 8	+15.0
14	44	5	76	4- 4	−11.0
15	71	13	83	8-11	−12.0
16	58	85	116	6- 6	+8.0
16	65	47	98	7-10	+1.0
17	59	76	108	6- 8	+4.0
17	74	64	104	9- 6	+2.5
17	64	20	88	7- 7	−7.5
18	94	48	99	13- 8	−1.0
19	73	78	112	9- 4	+7.0
19	101	97	140	15- 6	+25.0
20	48	13	85	4-11	−7.0
21	89	40	93	12- 6	−6.0
21	64	67	106	7- 7	+3.0
23	64	3	74	7- 7	−19.0
26	47	10	82	4- 9	−8.0
Mean					2.086
Standard dev					12.175

[1] Order of listing data: Father 1, mother 1, son 1 and/or daughter 1 belong to the same family.

APPENDIX E

STANDARD ERROR OF THE MULTIPLE CORRELATION FOR THE TEMPLIN-DARLEY TEST OF ARTICULATION AND THE PEABODY PICTURE VOCABULARY TEST SCREENING

TABLE 22.—STANDARD ERROR OF THE MULTIPLE CORRELATION

Normally hearing children	Hearing impaired parents	
	Templin-Darley	Peabody picture
Sons	0.177	0.175
Daughters	.169	.178
Children	.117	.123

THE TEACHING OF SPEECH AS A PART OF TOTAL COMMUNICATION

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The age-old conflict of opinions continues. The "oralism" versus "manualism" fight is never-ending. Dr. Edwin Martin in his address to the A. G. Bell Convention last year pointed out that there is no answer to this controversy.

Dr. Martin in introducing panelists representing both philosophies included the following comments:

> I think I sense a growing feeling of frustration on the part of parents, educators, and governmental policy makers with what frequently seems to be an emotional and mindless debate that drags on merely for the sake of battle, more for making points than for the benefit of the children . . .
>
> This kind of debate suggests that we lose track from time to time of what those of us who have worked as clinicians with hearing impaired people know to be true at the service level; there are no final answers in this area. No one has developed a program that can meet the needs of deaf youngsters universally, without regard to who they are, whom they work for, what they endure, what kinds of ability they have, and what kinds of family backgrounds they come from . . .
>
> The overriding concern of everyone here is to bring education to hearing impaired children, and we must get on with it . . . (1972: 528)

With Dr. Martin's challenge before us, I would like to address my remarks today to those educators and clinicians who have felt sincere concern for the future of speech instruction for deaf children. This concern is real, and it is justified for those of us who have dedicated ourselves to helping deaf children adjust to life in a hearing-oriented society.

Most of us present at the convention this week are representatives of schools where a philosophy of total communication has been adopted. Many are representatives of oral schools or centers. My comments are directed to both groups.

The opinions that I wish to share with you today are based on eleven years of teaching experience. Included in those eleven were five years in totally oral programs. Only in the past three years have I used signing or fingerspelling in my own classroom. In no way do I claim to have the final solution to our search for a better way to educate deaf children; however, I hope that you will receive what I have to say with open minds. And above all, I hope that you will find in it some truth and some application to where we are now in the area of educating deaf children of our time.

My remarks today are intended to stress three major points.

1. Total communication in its purest form does not eliminate speech nor does it intend to weaken speech instruction.

2. True total communication actually provides for optimum use of speech and of amplification.

3. If speech quality and quantity are lost when signing and fingerspelling are begun as parts of total communication, it is not the fault of the "system". Rather it is the failure of teachers, parents and other adults working with deaf children to accept the added responsibility for encouraging speech, listening and speechreading through supervision and example.

McCay Vernon defines total communication as "oralism and amplification plus much more . . . it is speech, speechreading, amplification, writing, sign language and fingerspelling." (1972: 529).

To this list of "and much more" could be added reading, gesturing, pantomiming, body language, etc. True total communication gears itself to the individual needs of the child and to a multi-stimuli means of building communication. In no way can oral communication conscientiously be removed from it.

Total communication is here. It is present in most of our residential schools for the deaf. If it is to realize any degree of success, it must be through proper example and useage.

Trained as a teacher of oral education myself, I have come to accept total communication as a faster means of developing language in young deaf children. I have also come to believe that speech development can be continued even when using other means of communication with it.

This, then, brings us to my third major point. I have heard, as I am sure many of you have, that the adoption of a total communication philosophy has allowed teachers a more relaxed, less strenuous mode of teaching. The assumption that because signs and fingerspelling are used in the classroom there is less work on speech, less stress on the use of residual hearing, less attention to speechreading should not be true. The idea that total communication is "the easy way out" is erroneous, *if* and only *if* the educator truly believes in TOTAL communication. Unfortunately these fallacies are supported by some of us who in actuality do not accept the additional challenge of keeping "total communication" total!

Teaching through oral communication is hard work! It is time consuming; it is physically tiring! How, then, can the *addition* of numerous other means of communication be less strenuous?

Most young children grasp manual means of communicating rapidly. These means are often more visual, more easily understood and more easily self-monitored than speechreading or speech. If that young child is allowed to substitute manual skills for oral ones, he obviously will do so. If, on the other hand, the child is constantly made aware that some effort at speech and speechreading are required by adults, he will find it difficult indeed to forget to use the speech he has been taught.

This constant reminding can only come from the adults who work with him. Adults who fail to remind, to prod, and to assist the child in his efforts to communicate are responsible for any loss of speech or speechreading ability. By the same token, the adult who fails to give a constant example of speech through his own communication is failing to carry out his responsibility.

Those of us who have worked in oral programs, if we have been effective, are not strangers to the need for constant reinforcement of speech patterns. The adoption of the philosophy of total communication has not decreased that need. In fact, the need is even greater for more effort, more attention, more constant reinforcing of what the child is able to express and to comprehend through oral skills. If we as adults fail to accept this greater challenge, we have made ourselves responsible for two great wrongs. First, we have offered the child the opportunity to discount speech as unimportant, unnecessary. Second, we have failed to give total communication a fair chance. We have misrepresented the entire philosophy. How, then, can we ever hope to find a better way of education for deaf children, when we continue to utilize incomplete, distorted interpretations of various philosophies.

It is my belief that few dedicated oralists will deny the statement that some deaf children have more potential for speech than others. Even so, those children have the right to develop whatever potential they possess, even if it is minimal. Through real total communication not only that right is offered, but also the benefit of other means of communication when speech alone is not enough. The deaf child then has the opportunity to share his very being with other members of his society through whatever combinations of sending and receiving skills he is able to utilize. He has the right also to select his associates according to a common bond of communication and an ability to share thoughts.

Several years ago most of us became enthusiastic about approaching learning experiences through the use of multi-media. If we accept the premise that various sensory stimuli can work together for a clearer, more comprehensive acceptance of some learning experience, why then can we not reason that communication can best be developed through the introduction of more than one stimulus? The use of only a slide projector can hardly be called a multi-media approach. Likewise, the use of only manual communication can certainly not claim to be a total approach.

The tape which you will see in a few moments shows a classroom of first-year preschool children during a specific speech period in their school day. These children have just turned five years old within the 72–73 school year. All but one child in the group were deaf prior to developing language. The parents of most of these children have attended sign classes and attempt to use total communication at home.

Within the twenty minute period, you will see the use of several modes of communication. Please note the teacher's use of residual hearing, speechreading, fingerspelling, signing, reading and writing, as well as the application to connected language within a specific speech lesson. In her direct approach to speech, she stresses not only articulation of speech elements and the combination of these, but also voice quality and pitch.

It is important that you be made aware that this classroom does not just have a speech period each day. This kind of teaching is continuous throughout the day, everyday. This is truly, in my estimation, a total communication approach to education for deaf children.

At the end of the preschool demonstration, the tape is switched to a class of seven year olds who have been in school three years. The teacher with them on the tape is the first deaf teacher to join our primary department. Even with a severe hearing loss herself, she maintains a total communication approach in her teaching. She is often unable to monitor the children's articulation errors, but constantly encourages them to use speech with voice in her classroom.

Having two first grade classes in the department this year, we have worked out an alternating schedule whereby this teacher goes to the other first grade room for vocabularly work, and the other first-grade teacher, who is hearing, has a regular speech period each day with the class you will see.

On the tape is shown a brief part of the news period when the children talk about Cowboy Bob, a local television celebrity who visited the department the last week of school.

The last child taped is a seven year old day pupil whose parents have just begun to indicate a desire to learn manual communication. She will read the daily prayer with no one stopping her to correct errors. The audiogram shown just after her prayer is her own, as taken by the school audiologist in the spring of 1972.

SUMMARY

A true total communication approach to teaching young deaf children does not eliminate high quality speech instruction. The success of speech teaching as a part of such an approach largely depends on the effort and example put forth by the teacher. With proper dedication on the part of adults serving the young deaf child, the combination of modes of communication can enhance both speech development and language development. Without this dedication and maximum effort on the part of educators of deaf children, no philosophy, present or future will reach optimum success.

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ON TURNING ON—TO A WORLD FULL OF SOUND

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One of the most important, essential components of a successful Auditory Training program, is an indefinable "something" which we refer to as *motivation.*

Motivation cannot be seen, touched, heard, smelled, tasted; nor directly measured, weighed or otherwise tangibly evaluated. However, its presence or absence in any education program is easily "sensed", observed and may be evaluated, through its effects upon the behavior of the program's participants. If the individuals are highly motivated, one will observe that they are "turned-on and tuned-in", active, involved and happy. If motivation is absent, one observes apathetic, inattentive, bored or "turned-off" individuals.

If young hearing-impaired children are to be turned on and tuned in to sound, they must become motivated individuals. They must be motivated to use their auditory channel, even if it is impaired, to the absolute limit their residual hearing will allow.

Not all motivation is intrinsic. Sometimes it must be enhanced by external sources. Responsibility for that external motivation usually falls to the classroom teachers. We plan to share with you some ideas that our experiences indicate are successful ways of motivating the very young hearing impaired youngster to "turn on" to a world full of sound.

MOTIVATION BEGINS EARLY WITH PARENTS

Motivation to listen and make use of residual hearing must begin at the very earliest moment one discovers a child has a hearing loss. The auditory channel, that "natural channel for learning" for the normal hearing child, must be stimulated early. For the hearing impaired or deaf child, early stimulation is even more vital. It is here that we begin to motivate *not the child*, but the *parents!*

One of the first things we do is to send the parents home from their initial visit to our Parent Home Center with a very specific assignment; to "turn themselves on" to the sounds in their home environment. We insist that they begin this process in a very concrete way:

1. Make a list—of *everything* in their home which makes sound.
2. Learn to react to those environmental noises themselves. Make an overt gesture of pointing to their own ears, and to verbalize, "I hear that."

When the parent begins to interrupt his/her activities 10–15 times a day to notice every jet plane which passes overhead, or every time the furnace fan clicks on, or the knives and forks clatter in the kitchen drawer, that parent's awareness is aroused; and that parent has become "conditioned" to sounds.

Next,

3. Show the child the sources of these sounds.

Then the parents are taught a specific conditioning technique. Successful auditory training begins with those parents who have turned themselves on to sounds. From this point on, the child's natural tendency to imitate begins to take over.

As the child reacts to environmental sounds and responds to the more formal conditioning exercises, his responses become consistent and reliable. It is usually at this stage that the audiologist is able to make a hearing aid recommendation. The parents are then guided through repeating the above steps over again, varying distances and reactions, showing even more enthusiasm in their own responses, as they teach their child to respond to sounds.

MOTIVATION NEEDS REINFORCEMENT

We must remind parents that they must give feedback to their child. They must show approval of his indications of awareness.

The teacher, or clinician who is guiding parents in educational programs at this stage, has a dual function.

1. She must serve as a model to the parents, reacting herself (perhaps exaggeratedly), to environmental sounds which may occur in the midst of a counselling session.

2. She must become a reinforcer to the parents when they begin to carry out the steps of the motivational process for listening with their child.

A formula which the teacher might wish to keep in mind at this stage would read:

$$\frac{A+A+A+A}{P+P+P+P}+\frac{A/S}{C/R}=LISTENER$$

Arousal plus Attending, plus Alertness, plus Acknowledgement (of the parents) over Patience, Practice, Praise, and Pleasure, plus Awareness of Sounds, over the Child's Responsiveness, equals a *listening* individual.

We believe that the child who is a "good" listener, the child who benefits from auditory training, is a child who has been aroused with patience; who has learned to attend through practice; whose alertness has been praised; who has received pleasure through his parents acknowledgment of his reactions; and therefore has become more aware of sound and more responsive. He has acquired a listening attitude. He has become a *Listener.*

MOTIVATION ELICITS RESPONSES THROUGH AUDITORY GAMES

Paralleling the above stage, parents are using verbal and vocal stimulation directly to their child's ear. We encourage the parents to use lots of vocal play, "ooooh's and ahhhh's," "patty-cake" and "hippity-hop to the barber shop" games; to imitate toy airplane sounds and toy cars, or a cat's "meow" and a sheep's "baaaa." Activities such as these are often preliminary to the child's learning to respond to his name. Once the child is tuned in to sounds, and begins to make those imitative gestures to his ear, or spontaneous vocalizations, it is time for Mom to invent a new game—the "Come, Johnny" game. Mother and child can play this game, whether or not the child is ambulatory. A child can learn to attend with his eyes, when Mama begins to consistently call his name.

Parents are encouraged to use the child's name often; to greet the child with a "Hi, Johnny" every time they enter his room, or start to pick him up, or reach to stop him from grabbing a favorite ashtray off the coffee table; or when they toss a ball, or prepare to go "bye-bye." "Johnny come"! or "Johnny look"! almost becomes the child's name for a while. Then it is time to involve the family in simple, "Johnny clap, Johnny stop, Mama clap—Mama stop" games; or "Johnny throw—Daddy throw," "Sister, jump—Johnny, jump" games. "Hide and seek" games in the basement (hiding behind a box or a clothes hamper), calling "Johnny, come find me," becomes great fun! Exercises, played with family members, with Mother giving verbal directions for "arms up, down, out, in" involving whole body responses; or variations of the old, "Simon says," and "Peekaboo" played from behind a door, with a nylon scarf, or a Halloween mask, or just plain newspaper, becomes the game of the day or the week. A singing game, "Where is Johnny?" (using the tune "Where is Thumbkin?")[1] can be introduced by Mother here, and may help Johnny to learn to listen for his name. Instead of playing the game as a fingerplay, Mother may actually shake hands with Johnny, asking him the question the song includes, allowing for an approximation of the expected response, or verbalizing it for him, and then allowing Johnny to actually "run away." Actions can be as lively as space and mother's or teacher's patience will allow. This game can be played, using finger puppets, made of family album snapshots and is a good way to teach other family member names, or classmates' names, if the child is ready for a group activity.

MOTIVATION TAKES ADVANTAGE OF THE CHILD'S NATURAL INTERESTS, DESIRES AND NEEDS

All of these games, besides teaching the child to respond to his name, are "fun" for the child. It is here that we think it is important to give consideration to the materials and "props" which we use in stimulating or motivating young children. All children love color, action, and movement. We often use props and puppets, and attempt to stimulate the child's imagination, his sense of "pretend." However, care must be taken not to over-stimulate.

One must keep in mind that young children often develop inexplicable and sometimes unreasonable fears about objects placed over familiar faces in their environment. The cognitive concepts relating to conservation of form or images, which the very young child may not yet have perceived, may influence his reactions at this stage. The most logical person to introduce the concept that objects or persons remain the same whether in sight or not, is the child's mother, or a familiar family member. It is in the context of play and pleasure that mothers can stimulate development of their child's cognitive development at the same moment they are motivating him to listen. We encourage them to play imaginatively, enthusiastically, and to listen, just for the "fun" of it!

Teachers and mothers, alike, need to learn to shed their inhibitions and be willing to dramatize situations. While cleaning out the closet, Mother could plop Daddy's baseball hat on, and pretend to "play ball." Johnny could be prepared to listen for the smack (hands clap) when the bat hits the ball. Then it can be his turn to dramatize. Or, perhaps they will find brother's Cub Scout uniform and they can pretend to stop, march, carry a flag, and listen for commands to "halt," "salute," and "march" again. Dramatizations of TV commercials, utilizing cereal box prizes or puppets on a pencil are often fun activities for mother and child. The "Vroom! Vroom!" motor sounds one can make with toy racing cars, and the blowing of shrill whistles which often come out of such packages, can become golden opportunities for spontaneous "pretend" play between mother and child. These opportunities abound daily, if the mother is alert to take advantage of them.

MOTIVATION ACTIVITIES FLOURISH IN THE PRESCHOOL

The child soon reaches an age-range where more formal preschool or PRE-preschool activities should be encouraged. In our program at Kansas University Medical Center, we begin some structured, but informal, Play Groups as soon as the child reaches an age of about two and one half. We strive to maintain a close relationship with the parents and continue to involve them in the child's small group activities. We attempt to point out individual differences in the children without encouraging parental comparisons with other children.

Since children reach the readiness stage at varying times in the year, what we do to motivate them is often seasonally influenced. For a group beginning in the summer, "Fun in the Sun" activities such as sliding, swinging, climbing a jungle gym, riding a merry-go-round, riding tricycles, splashing in a swimming pool may take precedence. For example, the child, both seeing and hearing the teacher or parent yelling, "Whee!" while going down the slide, or swinging high in the breeze, is receiving auditory stimulation. A simple verbal accompaniment to climbing, "up, up, up" the ladder to the slide, and "over and up, and over and up," on the monkey bars, and "down and around" or "round and round" as the children play on a merry-go-round is very effective. Phrases which are essential to be used when children are on a playground such as: Be careful!, Watch out!, Look out Johnny! Stop., Round and round., Jump down, please., Get in the swing., Come on!, Hurry up!, I want a push., and Help me!, are great auditory input for the children.

A readiness group beginning in the fall may utilize motivational activities associated with going to school. These may begin with Mother's early morning call to "Wake up, Johnny, it's time for school.", or listening to the noise the toothbrush makes as one brushes teeth for that first day's smile at teacher.

Once Johnny is at school, there may be traffic patrolmen blowing whistles to stop the cars; there may be a school bell or buzzer to listen for; and the classroom itself can be explored for things which make noise.

As the teacher begins to plan for the children, she will take into consideration the children's love of color, action and movement. She may again introduce "conditioning" exercises, or elicit a structured response to familiar sounds presented to the entire group. She will also introduce the children to individual auditory training equipment. She will condition a response to the school's rhythm band instruments or other instruments which produce musical sounds. Games such as walking, running, hopping, jumping, clapping and skipping to appropriate rhythmical patterns will be taught.

The writer has adapted several of the rhythm exercises and approaches to music utilized in many Montessori schools: Walking on a line, listening for an auditory cue, changing the walk to a run, stopping, listening for a different auditory cue (usually played on the piano), changing the rhythms, involving the children in waving a flag, walking heel-to-toe on a balance board; carrying a tray with a cup of water so that it does not spill, or stopping, turning around on the board; walking side-ways, or balancing something on the head. Each activity is programmed to specific auditory patterns or cues played on the piano, using records, or rhythms beat upon a drum. Each activity stresses the child's coordination and attention and a synthesis of body awareness, tuning him in to the world through his auditory channel, as he concentrates on the motor activity.

Emphasis on action songs or chants and "made-up" songs are often used in our program. Some of those most successful for early weeks with a beginning group are:

"The Together Song[2]," "Stand Up and Look Around[3]," "Two Little Hands[4]," and "Open-Shut Them[5]."

To give an example of using these songs: We utilize the "Stand Up" song when children get restless, and have found the "Two Little Hands" especially effective for those "antsy" moments when children are overexcited and have a need to move. The words to this song read:

> "Two little hands go clap, clap, clap.
> Two little feet go stamp, stamp, stamp.
> One little child turns around.
> All little children sit quietly down."

We do not attempt to teach the song word for word, but we have the children listen for the auditory emphasis of the CLAP, CLAP, CLAP, and the STAMP, STAMP, STAMP. The reinforcement they receive by performing the actions once they are attending well enough to clap at the appropriate moment is motivating for them. These songs may be familiar to older bothers and sisters and they, too can reinforce and provide the children with opportunities to practice in the home.

MOTIVATING ACTIVITIES MUST BE REPEATED

A major criterion in the selection of any activity we use to motivate children, is whether or not the activity provides for repetition and/or practice. Standard songs written for hearing children often do include repetitious phrases and repetitious rhythmical and melodic lines, such as "OLD MACDONALD,[1]" "THIS OLD MAN,[6]" "JINGLE BELLS,[7]" "MARY'S LAMB,[8]" etc. Some of these songs may be used just "as is." However, we do not rely solely upon these, and while the "feds" may "get us" someday for this, we do not hesitate to modify either the words or the music from commercial material to enable it to meet our needs. One such song is available in the Peabody Language Development Kit, called "The Not Song.[9]" The words go: "This is my hand, this is my hand, this is NOT my hand," etc. We successfully adapted this song with a group of three year olds to help them recognize pictures of their own homes, and to learn the word, "home."

This adaptation-to-music of familiar vocabulary may fulfill a need which is similar to that of the normal hearing three year old. That is, a need to "sing-song" about daily experiences. Often one hears the normal hearing youngster "sing songing" to himself as he plays or works at a self-selected task. These songs are rhythmical, utilize "everyday" words about what the child is doing or has just experienced. It may be a form of "thinking out loud." So also, the hearing impaired youngster has a need for rhythmical language and a way to use it. We do not expect the children to truly "sing" these songs, but if the language is simple and appropriate, and within the child's receptive vocabulary, we have observed some delightful responses and adaptations of this with some of our youngsters. The parents have remarked about the child's "singing" of these songs at home and we have been personally reinforced enough to recommend it to you. Try it! This is another means of integrating teacher planning to include auditory training in all language development plans.

MOTIVATION MUST BE AN INTEGRATED EXPERIENCE

We firmly believe that speech, speechreading and auditory training are facets of a child's educational program which cannot be separated. They must be involved in all experiences utilized in the classroom. Motivation for listening is an intimate part of that integrated educational experience. If listening activities are not automatically included, and integrated into the daily plan, we feel the teacher is neglecting her duty.

MOTIVATION INVOLVES CONTINGENCIES

Not all our auditory motivation and listening activities are limited to that which is music-oriented. We stress speech discrimination early. We strive to condition the very youngest children to make auditory discriminations of speech stimuli. We have found that sometimes our success with individual children in these highly structured experiences, depends on the type of contingencies we utilize. In a "closed-set" speech discrimination task, we have found that while the teacher's verbal stimulus is given auditorily, the children react with more interest and more willingness to participate, if various contingencies are employed. Some of the contingencies we have found most successful include having the child:

1. Make tally marks on the chalkboard, or place poker chips under or on the correct picture.
2. Pick up bits of food, candy, potato chips, or tokens, which may be exchanged for desired trinkets.
3. Hide or find the named objects within the room.
4. Turn off or on a reinforcing light, or find objects in a "mystery" or "feelie-meelie" bag.
5. Play with a movable toy such as a "jumping-jack" or hopping frog, or use a Buzzer Box or put in or take out puzzle pieces, or pegs.

If the classroom teacher or the clinician or parent, working with a child has auditory stimulation and auditory training as a goal, one only needs to think creatively about what all young children like and enjoy. One also needs to keep in mind what activities may be reinforcing to the children. Combining these two ingredients—creative imagination and reinforcing activities is what motivation is all about. The trick, if there is one, to motivating young hearing impaired children to use their residual hearing lies not so much in *what* one does, but, *that* one (1) *does something* to involve the children in listening. Further, that one provides opportunities for the children to (2) *repeat* those experiences that this is done (3) *enthusiastically*, with a (4) belief or *faith* in the child's abilities.

MOTIVATION IS CHALLENGING AND REWARDING

Turning on and tuning in, is a challenge; a challenge to the imagination of teachers and parents. They must make listening a reinforcing activity. As listening pays off for the child, either through tangible rewards, social praise, his group participation, his inner satisfaction and joy, a payoff or reinforcement comes to those who have worked hard to motivate the child. That payoff includes (1) observing the child's increased awareness, perhaps his alertness to safety hazards, (2) observing the child's increased sociability and interactions with peers and the environment, (3) an awareness of the child's better speech approximations, and (4) a probable increase in his accurate auditory speech discrimination abilities.

Finally, the payoff, for all who attempt to motivate use of residual hearing in young children has an *unknown* potentiality. An old adage says, "Until one taps the well one cannot know how much water is under the ground." and "To a man who's thirtsy, even a drop tastes good." A preschool teacher's analogy might well be coached in still another adage, "The fellow who thinks he can't is probably right." The ones who succeed at motivating young hearing impaired children to listen, are those who, like Wally Piper's *LITTLE ENGINE THAT COULD*,[10] say to themselves every day, "I think I can, I think I can, I think I can" and who say to their children every day, "I KNOW you can, I KNOW you can, I KNOW you can!"

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A MODEL FOR MEETING THE CHALLENGE OF RELEVANT DIAGNOSTIC ASSESSMENT

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Relevant diagnostic assessment is a key challenge to psychology. This demand is particulaly pertinent in educational settings. There is currently a strong emphasis in all areas of education on individualizing instruction in order to meet the specific needs of each learner and allow him to progress at his own rate. If such individualization is to be achieved, it becomes necessary to identify the individual learner's strengths, weaknesses, and needs in some organized manner. Traditionally, when educators have requested assessment of children for classroom planning, psychologists have supplied data from various tests or batteries and then attempted to relate the results to the educational situation. A frequent finding is that the diagnostic information has little relevance for complete educational planning. The isolated test scores do not seem to describe the total child adequately and may not point to paths for constructive change or growth.

Perhaps the tendency to build assessment around specific tests or test batteries rather than to focus on the structure of the learner has been a central problem in this diagnostic process. A more positive approach may be to start first with a model of the learner that specifies his various functional aspects with which educators are confronted daily in their classroom interaction and which underlie the learning process. With this model as a framework, diagnosticians may then select measures that supply information about the functioning of each aspect. Given data in this framework, educators may then individualize educational experiences to promote positive change in the learner.

The Project for Individualizing Instruction for the Deaf at the Callier Hearing and Speech Center has developed its diagnostic/educational system within this framework. The system as described in the Project report (Revised Educational System, 1971) attempts to manage all aspects of the school experience to meet the needs of individual learners. Various components of the total school experience have been identified (e.g. assessment, prescription, materials, activities, grouping, schedules, physical environment, personnel resources, peer associations, and objectives continua for each content area), and the available alternatives are specified. Teachers may select from the alternatives those strategies that are most appropriate for individual learners to reach specific objectives. As a part of this system, a model of the learner and a profile of his functioning have been designed to provide a thorough systematic description of the individual with his strengths and weaknesses pertinent for educational planning. This profile may serve as a guide for choosing among the various strategies available in the school experience.

Although this Project is serving deaf children between 6 and 8 years of age, the model and profile concept may have general applicability for other areas of education.

Model of the learner

The model generated to specify the aspects of the learner and provide a framework for relevant assessment and educational planning is shown in Fig. 1.

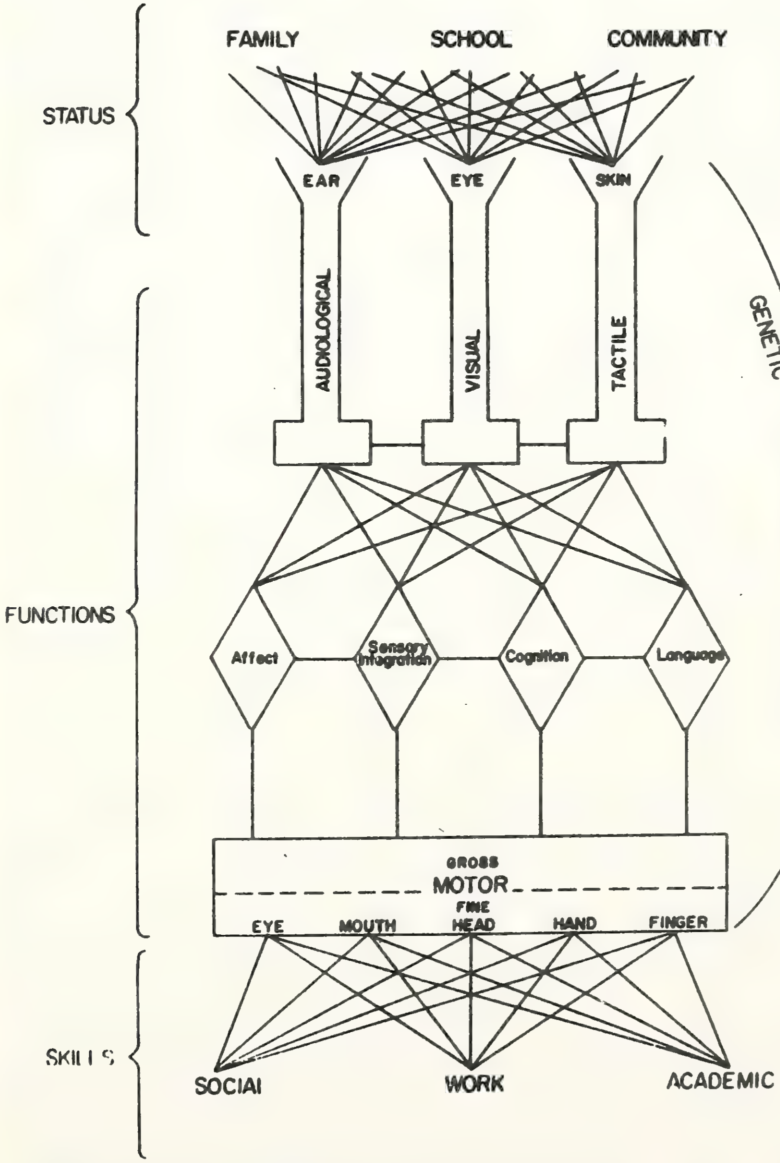

FIGURE 1.—Model of the learner.

Following a vertical flow, the various input factors of the child's environment such as family, school, and community are specified. Only through sensory channels may these factors enter or influence the learner. There are within each of these sensory channels an initial intake function and a further level of perceptual organization. After sensory processing, there are central levels of affective, sensory-integrative, cognitive, and language organization. Once processed and organized, information can be expressed in response or output only through some motor activity. Finally the end-products of the learning process are seen in the resulting social, work, and academic skills. All of this process takes place within the context of a physical system influenced by genetic, biological, and nutritional factors.

Diagnostic profile

In order to understand the individual learner and identify his educational needs, one should have information about each of the aspects specified in the model and their interrelationships. Therefore a diagnostic profile was constructed which would supply relevant data on as many of the learner functions as possible in a format to facilitate the making of educational decisions. Each section of the profile corresponds to an aspect of the learner in the model and consists of various items that supply data about that area of functioning. Table 1 shows the profile format for the items contained in the Visual Functions section. Items were chosen by continually asking the question "what pieces of information would be helpful in deciding upon individual classroom experiences?" As educators suggested answers, clinicians selected measures appropriate for supplying such pieces of information. Various standardized tests and subtests as well as research tools were utilized as may be identified from the source column. Data items were collected by social workers, psychologists, audiologists, speech pathologists, ophthalmologists, teachers, and aides.

The format, as illustrated in the sample in Table 1, was arranged to provide the basic information as well as the data necessary to interpret that information. Thus the test norm scores for each age level in the study sample appear in the Norm Score column. Then the child's actual raw score is given, and when available, it's age, percentile, or grade equivalent follows. The bar graph represents the child's item score in relation to the scores of all other children in the sample. Therefore a child may be compared to either a normative sample or to his immediate peers.

All data collected were computer stored and processed. Given input as individual items the computer was programmed to generate the profiles in the format described above. In addition to the print-outs for teacher use, the data provides a large base for group comparisons and long term research on the effect of the Individualized Instruction System approach.

Current use

In utilizing the model and profile, teachers report that general inspection readily identifies learners' major strengths and weaknesses and points to factors that may interfere with the learning process. Specific reference to pertinent items helps in strategy planning, and the profile information may be quite valuable in understanding failures when they occur. It also provides a measure of progress in various areas over time.

A major goal of the Callier study is research on the effects of an Individualized Instruction approach. By comparing data from the entering and leaving profiles, judgments can be made concerning the effects of certain instructional approaches on children with specific patterns of entering behavior. In this process it may be possible to identify specific patterns which predict educational needs and successful approaches.

In conclusion, it is important to emphasize the flexibility and adaptability of such an approach to relevant assessment. Thus the value of the model of the learner and its descriptive profile lies not in specific content but in its framework of providing relevant diagnostic information for making individualized instruction decisions.

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PARENT, TEACHER, CHILD—GETTING IT TOGETHER

Michaele Powell Call, M.A., teacher, San Mateo County Experimental Program for Deaf and Hard of Hearing Children, San Mateo County, Calif.

As we all know, parent involvement is of primary importance in the educational process of the young hearing impaired child. This involvement may take several forms. The parents may be expected to work with their child in a demonstration home setting, in the classroom, or in their home; attend meetings to gain information on deafness and its implications; observe the teacher working with their child and other children; have conferences with the teacher to discuss problems they have encountered or to discuss their feelings about their child; and read materials provided by the teacher.

The parents' attitudes about deafness and feelings towards their child are extremely important gears in the complex mechanism of his education and overall achievement. If the parents do not feel good about themselves as individuals, their relationship with each other, their role as parents, and their role as parents of a hearing impaired child, then the gears bind, causing the mechanism to become clogged and the progress of the child is slowed down. Consequently, parent counseling should be an important aspect of any program dealing with young hearing impaired children.

Dr. Winifred Northcott has stated:

> The critical need for parent counseling and guidance is at the moment of impact, when the diagnosis of deafness is first made and the child has been fitted with a hearing aid following a complete physical, otological, and audiological evaluation. Uncertainty is a condition that parents tolerate poorly. It can be eased by a prompt visit to a counselor who will encourage mobilization of vital energies for the future responsibilities.

Dr. Northcott went on to say:

> In this comfortable climate, the parents can express their misery and inner bleakness, receiving in turn specific guidance and some "homework" to do before the next visit (1976: 430–31).

How does the teacher develop the "comfortable climate" that Dr. Northcott mentioned? What does she do when the parents do "express their misery and inner bleakness"? Is giving the parents homework the answer?

Although there are many articles written on home training and parent education, only a few articles have been written on the most important aspect—parents' feelings and how to deal with them. Today I would like to share with you problems parents encounter prior to having contact with the teacher and the problems arising after an ongoing type of educational program has been established for the parents and child. In addition, I will talk about how our program in San Mateo County is set up to meet the parents' needs and techniques a teacher may find useful in attempting to set up a "comfortable climate."

The feelings that any set of parents have prior to having contact with the teacher are very complex as they involve many facets of their lives. For each parent the following feelings may act to compound or somewhat offset the problems the parents encounter in having a hearing impaired child: the mother's feelings about herself (Is she basically a happy person? Does she like herself); her feelings about her relationship with her partner (Is there a lack of communication? Is one or the other partner overly dominating? Is there a serious strain on the marriage?); her feelings about being a parent (Were the children planned? Does she feel adequate as a mother? Does she feel the children held her back? Does she resent her role as a mother? Does she enjoy her children?).

Now we combine the feelings of both parents and add to this the weight of having a hearing impaired child. How do the parents respond to this new weight? This weight has components of anxiety, fear, frustration, and guilt centered around the diagnosis. Although Fellendorf and Harrow (1970) reported that 70% of the parents responding to their questionnaire reported that less than a year evolved between the time the loss was suspected and it was confirmed, many parents feel guilty that they waited prior to making the appointment and having the loss diagnosed. Others feel anger at the diagnosis or lack of diagnosis given by the doctor. Often parents are told they are overanxious, that their child is retarded, or that the child cannot be tested until he is older. In a study Dr. Kay Meadows did, "One-third of the parents reported that the first doctor consulted said that their child was not deaf" (1968: 301).

Mrs. Ruth McAree (1970) wrote an excellent article based on her initial feelings and experiences upon suspecting a loss and eventually having it diagnosed. She has drawn some generalizations based on her experiences and those of other parents. They include the following:

> (a) A parent's early doubts are frequently ignored
> (b) A G.P. can block access to specialist advice
> (c) I was treated as an overfussy mother
> (d) One partially hearing child received no help until she was five years old
> (e) Deaf children have been diagnosed as aphasic or retarded
> (f) One child got no further than the audiometrician who told the parents that if their daughter went to a school for the deaf she would never learn to speak clearly (1970: 432–33).

Mrs. McAree went on to discuss the problems parents experience including a period of unreality, guilt based on the violence of their feelings, sleepless nights, tensions developing between partners, and anger.

In Dr. Schlesinger's article "Diagnostic Crisis and Its Participants", she described the emotions parents experience in terms of shock, bewilderment, sorrow, and guilt. She went on to say:

> Most parents expect an "ideal child;" in many ways this child is perceived as a gift to the mother, from the mother to her husband, or to her own parents. If the child is not perfect, old archaic conflicts are revived in even the best adjusted parents. Bewilderment and shock occur because of the discrepancy between the expectation and the reality; and the sorrow, which frequently is chronic, is accompanied by a genuine mourning reaction for the loss of the expected perfect child (Ross, 1964). Guilt feelings, almost always irrational, occur frequently. The parents may ask themselves, "Why did this happen to me?", only to come up with the answer: "Because I was bad!" Such a self dialogue awakens feelings of resentment and anger directed at themselves and at the child. These negative feelings against a child are usually unacceptable to parents and are likely transferred into guilt feelings (1972: 30).

The parent also may not know the cause of the loss and question whose fault it was. Well-meaning relatives and neighbors often give advice, question the cause, and suggest cures for the loss.

Now add the feelings just discussed to the complex structure of any family situation. Through the overwhelming experiences the parents go through in learning of their child's loss, they lose confidence in themselves as parents, feel inadequate with their knowledge, question how to handle the child, and question how to communicate with him.

Contact is established with the teacher and an ongoing program is initiated for the parents and the child. What problems develop as a result of the family's participation in the program?

If one partner is not able to attend the sessions with his child or attend the meetings with his partner, he may feel left out and less able to interact with his child. He may feel resentment based not only on receiving information secondhand and sometimes confused, but also on not knowing what is going on, not having his wife home all the time, and not knowing how to handle a more informed partner. He may also not feel able to express his feelings about the loss since our society has depicted men in the strong silent role and has discouraged men from showing emotion. Fortunately many fathers try to participate and do feel a part of their child's educational program.

Encouraging parents to become involved may backfire in several other ways. The parents may become very involved in meetings, school, apopintments and classes. They may resent not having more time for themselves and the other members of the family. The other members of the family may feel neglected. These feelings may appear in the hearing sibling's wish to be deaf or wish to have a hearing aid. She may also act up more than usual as an attention getting device. If the hearing sibling is not in school yet, she may resent seeing her younger brother going to school. Going to school occasionally is just not the same as having your own teacher.

Unreasonable limits may be placed on the hearing child so that the younger deaf child appears to have no limits due to his handicaps. The hearing child may also resent having to always keep an eye on her brother and having to play with him when she would rather play with her friends. Since all siblings at one time or another hate their brothers or sisters, a conflict within the hearing sibling may occur. She knows she hates her little brother for messing up her picture and yet feels guilty because she has been told how lucky she is that she can hear and how her younger brother is not so fortunate. How often do we take the time to allow siblings to express their feelings? This is one area in which we do not spend enough time exploring and yet is so important.

Parents are encouraged to work at home with their hearing impaired child and yet the question of how much time to spend is such a subjective one. As a result, parents often feel guilty about the extent of time they daily interact with their child as in the back of their minds they are thinking "I'm holding back his learning because I don't want to play with him this morning." Somehow we need to let parents know that we want them to ENJOY THEIR CHILD, that we do not expect them to be "super mothers", and that we realize the other responsibilities they have. Parents feel frustrated when they want to explain something to their child and he turns them off.

There are many other frustrations, including those connected with the method of communication used. When the method is oral communication, the parent may feel frustrated in not knowing whether her child understands her and in attempting to explain abstract ideas. When the method of communication is total communication, the parent may experience difficulty in learning to use total naturally and may feel a frustration when her children learn signs quicker than she does.

Now we can see not only the complexity of the family structure, but the weight of the hearing impairment and the additional weight placed on them by being involved parents.

Although the teacher should not be expected to deal with all the problems previously discussed, knowledge of possible problem areas may be helpful in her interactions with families in the program.

Now let's look at the teacher and her situation. Since parent counseling is not one of the areas dealt with in most university training programs, many teachers of young hearing impaired children have had little prior exposure to working with parents. Many programs for children over the age of three do not recognize the need for parent involvement other than through the program's monthly parent meetings. How does the teacher attempt to meet the parents' needs when she may have six families to deal with and little or no time allotted to work with the parents?

The teacher has a variety of experiences to chose from in setting up her program. It may be child-centered, parent-centered, or both; take place in the home, demonstration home, or school setting: include individual and group experiences; and include many exciting activities involving interactions between the parents, teacher, and child as well as interactions among children and among parents. Teachers may experience the frustration of not having the time to include all parts of a comprehensive program. If the teacher is in a situation where she is teaching children full time, is time allotted for her to meet with the parents? Are her administrators interested in parent involvement?

In the experimental program San Mateo County has for hearing impaired children 18 months to 3 years of age, we are most fortunate to have an administration that not only understands the importance of parent involvement, but also the importance of individually meeting the needs of each family. To indicate the interest of our administrators, a bill to lower the age of the children entering the program to 6 months of age has unanimously passed the Senate Education Committee in Sacramento and has been forwarded on to the Senate Revenue and Taxation Committee. We have close contact with the audiologists in the area and referrals are made quickly. The audiologists not only visit the program, but the teacher accompanies the children to the center when the children are to be tested.

As mentioned before, the program has been set up to meet the needs of each family. For a beginning family more emphasis would be placed on parent counseling and on home training activities. The more advanced parents might be reached through short conferences during daily visits to the class and the two monthly meetings, with the teacher focusing primarily on the child.

Although our program has many exciting aspects, due to time, I want to share with you only the parent involvement aspect. Parents are expected to bring the children to school and to stay and observe if the children are young or the parents have only recently learned of their child's loss. While three and a half days are focussed on activities centered in the school setting, home visits are made on the remaining day and a half.

The parents are seen individually and in groups. They are seen individually when they bring the children to school (parents of the youngest children stay to help out and learn) and on the home visits. The extent of the individual conferences depends on what the parent needs. Is she still having a rough time with her feelings? Can she work well with her child? Does she need information on the hearing aid?

All of the families attend two group meetings monthly. Fathers are expected, but not required to attend. One of the monthly meetings is an information type meeting with guest speakers, including audiologists, other parents, and deaf students and adults. The other monthly meeting is our "feely" meeting in which parents share and discuss their feelings about having a hearing impaired child.

In regard to our "feely" meetings, we have two groups and have been most fortunate to have Dr. Hilde Schlesinger lead one of the groups and one of her associates, Mrs. Barbara Safran, lead the other group. The parents are from our program or from nearby areas that do not provide this service. There is a limit to what teachers can work out with parents and we feel that the services of Dr. Schlesinger and her program, Mental Health Services for the Deaf, have been a blessing.

In our beginning group which started in December, we have seven families including one deaf couple that have a hearing child in the program as a language model. The sessions have been dynamic and the parents have been able to honestly look at some of the feelings they have been hiding. One mother found she could say things within the group that she could not tell her friends since her friends thought of her as a "super mother." She felt the parents within the group understood her feelings and did not condemn her. She has been able to express the feeling that sometimes she wishes her child was either hearing or totally deaf, rather than hard of hearing. Her friends always play down the loss, tell her how much her child understands, and tell her how good his speech is. She realizes that although he is hard of hearing and does not stand out as a child with a severe language proplem, he doesn't understand many things that are said to him. While the parents in the group understood her feelings and concerns, she believed that her friends would think her feelings were unwarranted. Her friends would feel her attitude was terrible when her feelings were really open, honest, and no longer kept inside.

Although teachers can handle some problems, the opportunity of having a top notch parent counselor to work with is not only extremely helpful, but very exciting.

No matter what the type of program, there is never enough time to accomplish everything. Often what will be omitted from a program is the area in which the teacher feels the least comfortable. Unfortunately, often the area excluded is that dealing with the feelings and frustrations of having a hearing impaired child twenty-four hours a day. Perhaps with more understanding of the "how to" in dealing with parents, teachers would feel more comfortable in this important area.

What are the qualities helpful in relating to parents and in meeting their needs? Enzer has stated that the creation of a true alliance with the parents is essential:

> Fundamental to such a relationship is mutual respect, honesty, and an egalitarian attitude on the part of the worker and the parents. While occasionally parents do present themselves with these assets, it is more likely that the climate will have to be created. No one can produce such an atmosphere unless he or she is willing from the outset to be nonjudgmental of parents, to understand that there are needs and feelings of which the parents themselves may be unaware and that, though parents may have little knowledge of child development or of parenting, they have a great deal to offer and all can learn (1972: 2–3).

He went on to say:

> Reliable information exchange requires a relationship of mutual trust and respect. Parents are not likely to offer maximum information without a solid relationship and they are certainly not likely to accept professional opinions or suggestions unless they trust the person making the suggestions (1972: 4).

There is a relatively new book titled *Parent Programs in Child Development Centers* which includes several excellent articles on teacher-parent interactions and a comprehensive annotative bibliography. Many of Dr. Hilde Schlesinger's and Dr. Kay Meadow's articles would also be helpful to teachers and others concerned with the parents' feelings and how to deal with them. Articles written by deaf adults or by members of their families may also be helpful. If the teacher is interested in objectives written on parents' feelings, the California Preschool Deaf Curriculum Project (Title VI) has a section on parent involvement which will be ready for field testing this summer.

In writing this paper I decided that what teachers needed and what has been given little attention in the professional journals are ways to deal with parents in order to develop a good rapport and a mutually growing relationship. In trying to write down what I do with parents, I had difficulty as the ways are subtle and instinctive. On the way home recently, from a home visit that lasted four and one-half hours and was primarily centered on the parent's feelings. I tried to write down some of the techniques. Although they are not unique, they may help other teachers particularly those new to the field of dealing with parents.

Who is the teacher that deals with parents? She should be well informed about deafness and the resulting implications, audiology, hearing aids, deaf adults and their life styles, child development, child management, language development, and resources available. She should also relate to parents on such a level that they are working together as a team—as equals. In other words she has to be able to relate to adults as well as to children.

Who is this person able to develop such a relationship? What are those important qualities?

It's listening well, not only to what is said but to what the parents are really saying behind those words.

It's being willing to listen patiently to all the experiences the parents have had prior to meeting with you.

It's taking the time when the family needs you.

It's being warm, accepting, genuine, and truly interested in the parents and what they have to say.

It's being honest, sincere, and open with them.

It's understanding feelings and how to deal with them.

It's not always feeling the need to give advice.

It's knowing when to listen and when to be comfortable with silence.

It's giving information in language the parents can understand when requested or when the time is right.

It's never dealing lightly with what the parents are saying or reporting.

It's not being afraid to admit that you don't know the answer.

It's not being afraid to request help from a professional counselor when you feel your help to the family has met a stumbling block or their problems are too deep for you to effectively deal with.

It's remaining objective and nonjudgmental while attempting to keep your values out of the way.

It's being comfortable with parents.

It's being a sounding board.

It's reflecting the feelings of the parents while also being realistic.

It's dealing with parents as equals.

It's enjoying the family and your time with them.

It's being flexible.

It's dealing with each family in its own way.

It's finding the good qualities in parents and reinforcing these without overdoing it.

It's drawing the parents' attention to their child's assets.

It's not being afraid to share concerns about the child's limitations.

It's not forgetting the other siblings and other relatives that may need time.

It's letting the family know that they are not alone and that you're there when they need you.

It's being aware of the things that can be changed, cannot be changed, and should not be changed.

Getting it together really means for parents, teachers and children to enjoy each other and learn from each other. In growing together we are promoting the development of the child's potential in as conducive an atmosphere as possible.

SUMMARY

Audience was very attentive, with several questions being asked.

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COUNSELING: TO HELP A PERSON BECOME

John P. Carroll, Ed.M., assistant to the superintendent, Boston School for the Deaf, Randolph, Mass.

In an effort to give a presentation of substance and accountability in the area of counseling hearing-impaired youngsters, I offer you a philosophical view of counseling and the counseling process, based upon the moral and spiritual belief that everyone has a right to a full and rewarding life and that there is a "place" in life for all persons.

> God creates in each person a unique personality, gifted in an individual way . . . The great adventure of life is to actualize that potential personality. No man draws on all of his gifts and resources at every moment, except perhaps in myth. Every man has some of them available. However, he never reaches a stage beyond which he cannot emerge in some way. Thus the emergence of self is a continuous event. We never arrive; we are forever arriving (1).

The counseling process, too, is in a perpetual state of arriving. From this point of view, the effective counselor is aware that the process should have no specific goals or end products. The counseling process through the vitality of the counselor seeks to activate and to develop to the fullest . . . the potentials inherent in each individual. One or a series of potentialities actualized leaves other areas for activation and development. The never ending counseling process like the process of life, should seek to bring out all that is good and worthwhile within us.

The Emergence of the Counseling Process

Effective counseling involves a dynamic relationship between the counselor and the student, a relationship that must be based upon mutual trust and understanding. Without these qualities as a basis, there is no real relationship and, hence, no counseling process.

How, then, is a relationship based on mutual trust and understanding developed? Certainly two strangers cannot walk into a room and find instant rapport. Quite the opposite, mutual trust and understanding are built upon a foundation stone of honesty and open communication. If one makes a real effort to be honest with himself and with others, he takes the first step toward becoming an effective communicator and starts to build a meaningful relationship.

The vital importance of communication and understanding and their relationship to life, are brought alive in the words of Russell Huff:

"A lot of people we know we don't really know
Because we can't communicate with them.
We never seem to penetrate past their protective shields,
To get to know the real person within.
Maybe that's why there are so many beautiful but lonely people today,
Who feel isolated from the mainstream of life and love.
Like a lone, dusty rose in a vast wasteland.

"Communication with others is difficult for everyone:
One person misunderstands what another says.
And asks himself, 'What does he mean by that?'
Then he wonders why deep down he feels so unsure
Of so many things including himself. . . .

"We have all become skilled in using words without saying anything,
And often when we talk, we do not really reveal ourselves to others.
When someone asks, 'How are you?'
We give them the pat answer, 'Fine, thanks!'
Because no one wants a case history
Of how often we feel frustrated, lonely and discouraged,

"We all need the gift of understanding which enables us to see
The need others feel to be understood, accepted and appreciated,
So we will come out of our protective shells and see all that is lovable in others,

"The gift of understanding allows us a clear insight into the influences which have brought each person,
As God made him and circumstances shaped him,
To be what he is today.

"This gift of understanding gives us an insight into beauty.
It helps us to appreciate not only the glistening snow of January,
The first green buds of spring, and the golden autumnal leaves,
But even more to see and to experience the beauty of a person . . . a complex, wonderful human being . . . and share his world of words, ideas, and actions,
As well as his aspirations for time and eternity.

"Understanding frees us to share in the happiness of others even as we share in their distress and confusion
And thus helps us to be thankful for the gift of life and the opportunity to share these experiences with them." (2).

At this point, it becomes increasingly evident that the effective counselor is one who can initiate the process of counseling through insight and understanding of the needs of his client. To witness growth, to observe positive change, to see one of many potentials realized—these are the victories achieved through counseling. Clearly the inspired gift of insight is of more value to the counselor than any other single skill, training or educational experience.

BECOMING—THROUGH DEAFNESS AND ISOLATION

There has been no attempt to avoid discussing the issue of deafness, thus far, in this paper. Rather, the statements expressed relate to all humanity since all of us in one way or another, are in the stages of becoming. Life is a continuing process for all men, and as such, demands the fulfillment of needs, the untapping of God-given potentials and the realization of the goal that we leave the world a better place for our having been a part of it.

The world of the secondary age hearing-impaired student is similar in most respects to that of his hearing conterpart. Daily, he attends classes, does his homework, engages in a wide variety of activities, and interacts with various individuals on varying levels. As part of the human condition, he meets with success and failure. He has peaks of optimism and valleys of despair. He finds in the world friendship and hostility, kindness and animosity, acceptance and rejection. Counseling, as a vital component of education, seeks to prepare the hearing-impaired individual to deal with these qualitative aspects of learning and living, in terms of his own self-growth and adjustment. It seeks to bring out within each individual those strengths which will enable him to cope with the realities of life.

It is not my function here to gloss over the social, emotional or educational ramifications of deafness, nor to treat lightly the impact which hearing impairment has upon the individual in terms of achievement, maturation or any of the other so called barometric terms we use to describe and measure the "well-adjusted" person. Naturally we assume that the counselor "knows his client", his strengths and weaknesses, and is able to use with him the most effective and facilitative vehicle of communication. Too, the counselor will be aware of and competent to deal with the family situation as a means of improving or increasing the base of stability for his client.

CONCLUSION

This paper has tried to emphasize the importance and magnitude of three critical areas which are a function of or related to the counseling process:

(1) Becoming (through growth and change).
(2) Communication (through honesty, openess and awareness).
(3) Adjustment (through living life on its own terms).

Man has a vast potential for good which lies, like a seed, deep within the inner confines of his soul. Nurturing the seed is the worthwhile work of a lifetime, indeed, the purpose of life itself. The seed bears fruit in a happy, productive and meaningful life. In theory, everyone has both the right to this kind of life and the responsibility to see to it that no one is deprived of the opportunity to develop his potential to the fullest. The function of counseling is to make the theory a reality.

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RELATIONSHIPS BETWEEN VISUAL SPEECH RECEPTION AND LINGUISTIC FEATURES OF SENTENCES

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The literature contains many examples of attempts to determine which aspects of the language code are important in lipreading

(Heider and Heider, 1940; Taaffe and Wong, 1957; Lowell, 1959). The present investigation examines the relationship between lipreading and two aspects of language which have been previously investigated (vowel-consonant ratio, and sentence length) and one aspect of language (lexical density) which apparently has not been investigated previously. That is, the main purpose of this study was to determine the effect of the linguistic features (vowel-consonant ratio, sentence length and lexical density) on hearing impaired subjects' ability to lipread. Of secondary interest was a comparison of hearing impaired subjects to normally hearing subjects to see if both groups were affected the same way in their lipreading ability by the three linguistic factors. This is of consequence as a possible justification for the rather common practice of doing lipreading research on normal subjects and extrapolating the results to the hearing impaired.

REVIEW OF LITERATURE

Heider and Heider (1940) were one of the first to explore the relationship of vowels and consonants to lipreading. They used hearing impaired students in their study and concluded that for that group of subjects vowels were more reliably lipread than consonants and that subjects' ability to lipread vowels correlated higher with general lipreading ability than did subjects' ability to lipread consonants. The Heiders' stated that their data in no way could be interpreted to mean that vowels were more easily lipread than consonants, but in some quarters that is exactly the way it has been interpreted. Taaffe and Wong (1957) also investigated the effect of vowels and consonants on subjects' ability to lipread. Using normally hearing individuals as subjects, they concluded that consonants did make lipreading more difficult, but there are several unanswered questions concerning that study. One of those unanswered questions involves why Taaffe and Wong found consonants related to lipreading difficulty, when consonants and vowels were determined simply by looking at the alphabet, as opposed to an IPA type determination of vowels and consonants which was not found to be related to lipreading at all.

The issue of vowels and consonants and their relationship to lipreading is in need of more research, and for that reason were included in the present study.

The relationship between sentence length and lipreading ability has been investigated previously by Morris (1944) and by Taaffe and Wong (1957). In both studies the data appeared to demonstrate that lipreading became more difficult with increased sentence length; however, neither study included a statistical analysis and therefore one cannot say for sure that there is such a relationship. As with vowels and consonants, more data are needed on the effects of sentence length on lipreadability, and for that reason the variable of sentence length was included in the present investigation.

The last factor in the present study was that of lexical density. Lexical density may be described as the number of lexical words in a sentence divided by the total number of words in a sentence. If a word is not considered to be a lexical word, it is considered to be a grammatical word. Perfetti (1969b) determined that nouns, adjectives, adjective and noun verbs, adverbs and main verbs (except copular forms) were counted as lexical; (and) determines, prepositions, copulas, pronouns, conjunctions, and verb auxiliaries were considered grammatical (p. 721).

In two experiments with normally hearing subjects, Perfetti (1969a, 1969b) found that as lexical density increased, subjects' ability to recall sentences decreased. Perfetti stated that lexical density was an index of the semantic content load of sentences. It is for this reason, plus the fact that lexical density decreases normally hearing subjects' ability to recall sentences, that lexical density was included as the third linguistic feature to be investigated for its effects on subjects' ability to lipread.

In view of the above review of literature, investigations of the relationships of vowel-consonant ratio, sentence length, and lexical density to lipreading ability in hearing impaired subjects, and whether or not the linguistic features affect both hearing impaired subjects and normal subjects in the same way, appears to be germane.

PROCEDURES

Subjects

Twenty adult normal and twenty adult hearing impaired individuals were matched for age, and lipreading ability. All subjects passed the Snellen screening test for 20/20 vision. The mean age of the hearing impaired individuals was 18.75 years, while for the normal group of subjects the mean age was 18.10 years. Lipreading ability was determined by using sentence form A of the Utley lipreading test. A *t* test between the mean Utley score for the normal group (mean score 30.1) as compared with the mean Utley score of the hearing impaired group of subjects (mean score 28.90) showed no significant difference ($t=0.25$, $p<0.05$).

In addition, all hearing impaired subjects had hearing loss in the better ear which averaged 60 dB HL (ISO) or greater for the frequencies 500, 1000 and 2000 Hz, and, in a attempt to assure a degree of homogeneity at least a sixth grade level or above on the Paragraph Meaning section of the Stanford Achievement Test (Advanced Battery).

None of the subjects in the study had an impairment such as mental retardation or emotional disturbance which would be expected to interfere with experimental test performance.

The normal subjects all had to pass an audiometric screening test administered to both ears at 25 dB HL (ISO). As University students, it was assumed they had adequate language ability.

Materials

The stimulus material consisted of three lists of fifty active declative sentences. The first list was made up of sentences three words long, each composed of three or four morphemes. The second list was made up of sentences six words long, each composed of six or seven morphemes. The third list consisted of sentences nine words long each made up of nine, ten or eleven morphemes. All words used in the sentences were not more than two syllables long, and were in the highest two (most frequently occurring) categories of words as determined by Thorndike and Lorge (1944).

Sentences in each list were arranged to vary systematically with regard to vowel-consonant ratio, and lexical density. Using the symbols of the International Phonetic Alphabet, vowel-consonant ratios (v/c) were calculated for each sentence by classifying each phoneme by *vowel* or *consonant*, and by dividing the number of vowels in a sentence by the number of consonants in a sentence. Lexical density (LD) was determined by using Perfetti's (1969b) description as discussed above. The actual computation of lexical density values was a ratio of the number of lexical words divided by the total number of words in the sentence. An example of a three word sentence with $v/c = 0.50$, and $LD = 0.33$ is, "She was kind". An example of a six word sentence with $v/c = 0.67$, and $LD = 0.67$ is, "two boys ran by the house", and an example of a nine word sentence with $v/c = 0.63$ and $LD = 0.56$ is the sentence, "The girl took the little boy into the store".

Among the three sentence lists (three, six and nine word sentences) the distribution of v/c was approximately rectilinear and of the same range; the LD distribution also was approximately rectilinear and of the same range among the three sentence lists. The distribution of v/c and LD for the six word sentence list can be seen in Figure 1. The ranges of percentages for v/c and LD among three and nine word sentences were essentially the same as for six word sentences. In addition, each of the sentence lists was constructed so that there was no significant correlation between v/c and LD (e.g., correlation between v/c and LD for six word sentences was $r = -0.13$). (This was necessary because if a significant correlation existed between the v/c ratio and LD, it would be difficult to obtain a pure set of data regarding the relationship between lipreading score and only one of the factors.)

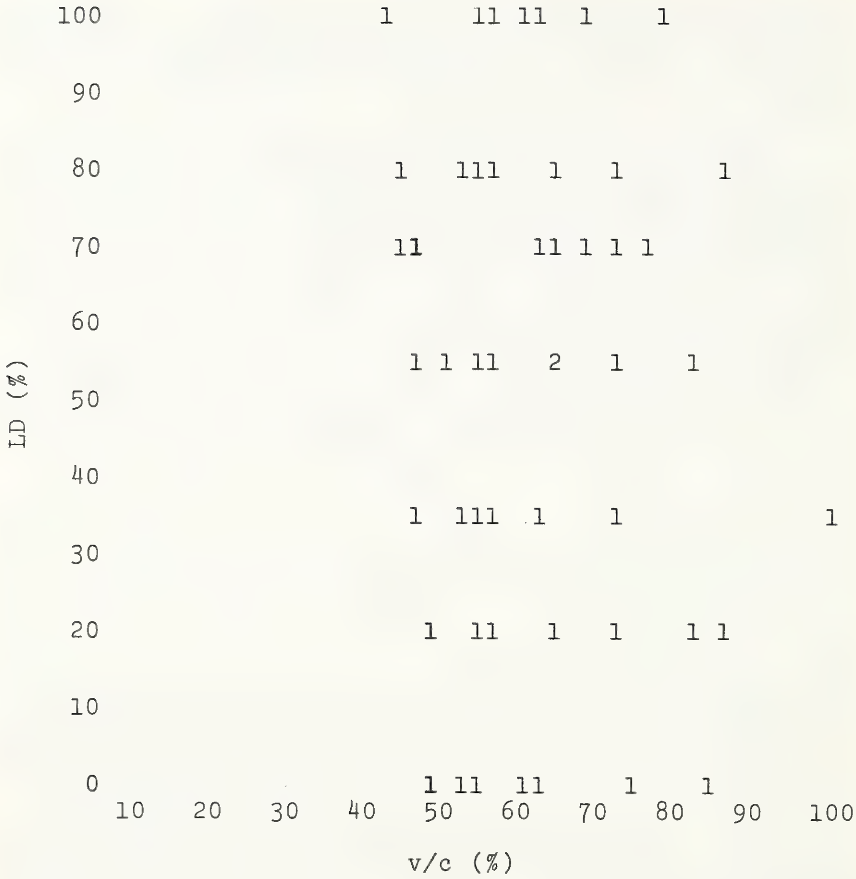

FIGURE 1.—Frequency Distribution of v/c and LD for Six Word Sentences.

NOTE.—The number 1 or 2 in the frequency distribution represents the number of sentences at that point in the distribution.

After the sentence lists were constructed, they were combined into one list of 150 sentences. From this list of 150 sentences, sentences were selected at random until three new sentence groups of fifty sentences each were selected. These new groups each contained three, six and nine word sentences which randomly varied with regard to v/c ratio and LD values.

Equipment

Both the Utley Lipreading Test and the stimulus sentences were recorded using a Panasonic Video tape recorder Model NV 800, without the audio. A female speaker was used to record the sentences. She was seated against a plain background at such a distance as to provide a life size image on the TV monitor, and was tape recorded using a Panasonic TV camera model WVO 339. The sentences were recorded with enough time between presentations to allow the subjects to respond by writing their responses on a pad of paper.

TEST ADMINISTRATION AND SCORING

A quiet, dimly lit room was chosen in which to have the subjects view the TV monitor. Groups of between four and eight subjects were tested during a single session. Each sentence was lipread by each of the subjects. Groups of between four and eight subjects were tested during a single session. All subjects were seated within nine feet of the TV monitor and also within approximately 25 to 35 degrees angular distance from an imaginary line drawn perpendicular to the TV screen.

After each sentence was viewed by the subjects, they wrote what they thought the sentence was. The following rules were used for scoring subject responses:

1. If the sentence was written exactly as presented, count no words incorrect (misspelled words counted as correct).
2. If all words were present in the response but not in the order as in the stimulus, and exact meaning was preserved, count no words incorrect.
3. If a sentence was written correctly except for one or more morphological endings of words, count one word incorrect. (However, in the case of the hearing impaired subjects, the morphological error was not counted if it appeared the error was due to a language deficit of the subject; e.g., if stimulus was "John loves Mary", but response was "John love Mary", no word was counted incorrect.)
4. If there were other errors (e.g., omissions, substitutions or additions of words) as well as morphological errors, the morphological errors were not counted, and one word was counted incorrect for each omitted, substituted or added word.
5. The lipreading score for each sentence was taken as the number of words in the stimulus sentence less the number of error words, divided by the total number of stimulus words. Scores ranged between zero per cent and one hundred per cent.

DATA TABULATION AND RESULTS

A mean lipreading score for each sentence across all subjects in each group was obtained. Thus, for each sentence in each of the three, six and nine word sentence lists, the data included a mean lipreading value for normal subjects, a mean lipreading score for hearing impaired subjects, a v/c ratio and an LD value. (Appendix A shows the statistics for each sentence in each sentence list.)

Table 1 shows the over-all means and standard deviations of the lipreading scores obtained.

Pearson's produce moment correlation coefficient was used to determine the relationship between the v/c ratios and the lipreading scores for each group of subjects (See Table 2). Table 2 shows that for all sentences combined, v/c was not related to lipreadability for either the normal or hearing impaired subjects. Table 2 also shows that v/c was not found to be significantly related to lipreading score for any of the sentence lengths for either group of subjects.

TABLE 1.—MEANS AND STANDARD DEVIATIONS OF LIPREADING SCORES ON NORMAL AND HEARING IMPAIRED SUBJECTS ON 3-, 6-, AND 9- WORD SENTENCES

	3 word sentences	6 word sentences	9 word sentences	Mean for all sentences
Normal subjects:				
Mean deviation	44.35	32.81	32.69	36.62
Standard deviation	26.29	17.23	21.18	22.42
Hearing impaired subjects:				
Mean deviation	42.18	31.16	30.94	34.76
Standard deviation	22.90	13.79	15.57	19.09
All subjects: Mean deviation	43.26	31.98	31.81	35.69

TABLE 2.—CORRELATION COEFFICIENTS BETWEEN V/C RATIOS AND LIPREADABILITY SCORES, AND LD AND LIPREADABILITY SCORES FOR 3-, 6-, AND 9-WORD SENTENCES FOR NORMAL AND HEARING IMPAIRED SUBJECTS

	Normal subjects		Hearing impaired subjects	
	v/c	LD	v/c	LD
All sentences (N=150)	0.02	−0.28*	0.10	−0.06
3-word sentences (N=50)	.072	−.268	.102	−.101
6-word sentences (N=50)	−.169	−.276	−.016	.098
9-word sentences (N=50)	.156	−.401*	−.245	−.202

Note: For N=50, r=0.279 required for 0.05 level of significance. For N=150, r=0.16 required for 0.05 level of significance.

The Pearson *r* was also used to determine the relationship between the LD values and the lipreadability scores for the two groups of subjects. Table 2 shows that for all sentences combined, LD was related to lipreadability for the normal subjects, but that LD was not related to lipreadability for the hearing impaired subjects. It can also be seen from Table 2 that LD was not related to lipreadability for either group of subjects for any sentence length, except for normal subjects on sentences nine words long.

Using Fisher's logarithmic transformation of *r* to test the difference between correlation coefficients (Blommers and Lindquist, 1960), it was found that for all sentences combined, the correlation between v/c and lipreadability for the normals was not significantly different from the correlation between v/c and lipreadability for the hearing impaired. When the correlations between v/c and lipreadability for the sentences of different lengths for the normal subjects were compared to the correlations between v/c and lipreadability for the sentences of different lengths for the hearing impaired subjects, no significant differences were found.

When the correlation between LD and lipreadability for all sentences for the normal subjects was compared to that of the hearing impaired, a significant difference was found. However, when the correlations between LD and lipreadability on the sentences of different lengths for the two groups of subjects were compared, no differences were found.

In order to determine the effect of sentence length on the lipreadability of sentences among hearing impaired subjects, a one-way analysis of variance with repeated measures on one factor was used. The analysis of variance (Table 3) demonstrated a significant difference in hearing impaired subjects' ability to lipread three, six and nine word sentences ($F=48.94$, $p<0.05$). The Tukey Test was used to test the difference between the means (shown in Table 1) of the hearing impaired subjects. Results of the Tukey Test showed that there was a significant difference between the three word sentences as compared to the nine word sentences ($F=13.32$, $p<0.05$) and that there was a significant difference in three word sentences as compared to six word sentences ($F=13.06$, $p<0.05$) but that there was no significant difference between the mean of the six word sentences and the mean of the nine word sentences ($F=0.26$).

TABLE 3.—ANALYSIS OF VARIANCE SUMMARY FOR EFFECT OF SENTENCE LENGTH ON HEARING IMPAIRED SUBJECTS

Source of variation	Sums of squares	dF	F ratio
Within subjects:			
A	1,652.62	2	[1] 48.94
Error term	1,283.22	76	

[1] Statistically significant ($p<0.05$).

A one-way analysis of variance was also used to determine the effect of sentence length on the lipreadability of sentences among normal subjects. The analysis of variance (Table 4) demonstrated a significant difference in normal subjects' ability to lipread three, six and nine word sentences ($F=53.11$, $p<0.05$). The Tukey Test showed that there was a significant difference between the three word sentences as compared to the nine word sentences ($F=13.80$, $p<0.05$) and that there was a significant difference in three word sentences as compared to six word sentences ($F=13.67$, $p<0.05$) but that there was no significant difference between the mean of the six word sentences and the mean of the nine word sentences ($F=0.13$). See Table 1 for mean values. Both groups of subjects found three word sentences easiest to lipread.

In order to determine how the hearing impaired subjects compared to the normal subjects, a two factor analysis of variance design was used with repeated measures on one factor. Table 5 shows that for factor A (overall difference between the groups) no significant difference was found ($F=0.33$).

TABLE 4.—ANALYSIS OF VARIANCE SUMMARY FOR EFFECT OF SENTENCE LENGTH ON NORMAL SUBJECTS

Source of variation	Sums of squares	dF	F ratio
Within subjects:			
A	1,793.64	2	[1] 53.11
Error term	1,293.22	76	

[1] Statistically significant ($p<0.05$).

TABLE 5.—ANALYSIS OF VARIANCE SUMMARY FOR EFFECT OF SENTENCE LENGTH ON NORMAL AND HEARING IMPAIRED SUBJECTS

	Sums of squares	dF	F ratio
Between subjects: A	103.23	1	0.33 (NS).
Subjects within groups	11,813.90	38	

DISCUSSION AND CONCLUSIONS

On the basis of the data it must be concluded that v/c ratio is not an influential factor among hearing impaired or normal subjects with regard to their ability to lipread sentences of different lengths.

There are therapeutic as well as research implications for this finding. It would appear as though the number of vowels relative to the number of consonants need not be controlled when lipreading therapy is carried out on a group of subjects similar to those hearing impaired subjects described in this study. For research, there are two implications which can be drawn from the finding on v/c. The first is that using normal subjects (as Taaffe and Wong did) and extrapolating the results to hearing impaired persons is supported, at least when the experimental variable is v/c ratio. The second research implication concerns the question of why v/c ratio was not determined to be significant. The answer may lie in that subjects do not lipread one phoneme at a time, but rather lipread by semantic units. These semantic units may be either morphemes, words, phrases, or sentences but regardless of what they are, the lipreader either recognizes the movement seen as something known or the lipreader does not recognize the movement. Whether the semantic unit contains more consonants than vowels (or more vowels than consonants) is apparently irrelevant as long as the subject identifies the movement.

It is suggested that future research not concentrate on the relative importance of vowels and consonants in the lipreading process but that research may be more properly directed to the question of intra-vowel and intra-consonant confusion on the lips [1] and to how this confusion is effected by phrases and/or sentences, i.e. semantic units (Fisher, 1968).

The second feature examined was that of sentence length, in which case it must be concluded that hearing impaired subjects found three word sentences easier to lipread than either six or nine word sentences, and that there were no differences in their ability to lipread six and nine word sentences. It is further concluded that there are no differences between hearing impaired subjects and the normal subjects with regard to the effect that sentence length has on lipreading ability. Because there were no significant differences between the two groups of subjects, support is given to the practice of using normal subjects in lipreading research and extrapolating the results to hearing impaired subjects.

It may appear that the reasons that both groups of subjects had difficulty in lipreading sentences six and nine words long are related to either subjects' inability to retain and recall sentences of that length as compared to sentences three words long, or that the longer a sentence the more difficult it is to understand perhaps because of sentence complexity. While the former idea may be related to lipreading difficulty, it is difficult to make a strong case for subjects' inability to recall a six or nine word sentence as being the variable causing poor lipreading scores because a sentence six or nine words long which is immediately recalled or reproduced without any intervening interference does not appear to be a difficult task assuming the sentence has been comprehended or understood (Myklebust, 1971; Perfetti, 1969a). The latter factor, that the longer the sentence the more complex, is somewhat offset by the fact that all of the stimulus sentences (whether three, six and nine words long) were active declarative sentences, which would limit their complexity.

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[1] **Commonly called homophoneity.**

Perhaps the most likely reason for subjects' poor lipreading scores for sentences six and nine words long may be that subjects have difficulty recalling information presented visually as the input channel. That is, the limited visual memory ability of the subjects is probably an important factor leading to lower lipreading scores on six and nine word sentences. Support for this observation comes from Neisser (1967) who has suggested that echoic (auditory) memory is longer than iconic (visual) memory and from research by O'Neill (1951) and Simmons (1959) who have shown a relationship between visual memory task and subjects' lipreading ability. Textbooks on lipreadings therapy routinely have chapters which include practice exercises designed to increase the lipreader's visual memory span (O'Neill and Oyer, 1961; Jeffers and Barley, 1971). It is felt that the results of this study, with regard to subjects' ability to lipread sentences of different lengths, gives support to the aspect of lipreading therapy which is designed to increase the lipreader's visual memory. At the same time it is felt that future research should be directed towards determining more specifically the relationship between subjects' ability to lipread sentences of different lengths and their visual memory abilities.

The last experimental variable to be discussed is that of lexical density. It is concluded that lexical density is not a significant factor in hearing impaired subjects' ability to lipread sentences three, six or nine words long. However, because of the significant (but low) negative correlations between LD and lipreadability of nine word sentences as well as for the three sentence lists combined it may be concluded that there is a relationship between LD and lipreadability of sentences for normal subjects. The obtained correlation coefficients were so low that statistically significant differences between the normal and the hearing impaired for the sentences of different lengths were not obtained.

As if to further confuse matters, a statistically significant difference was found between the correlation coefficient for LD and lipreadability of all the sentences combined for normal subjects when compared to the correlation coefficient for LD and lipreadability for hearing impaired subjects.

In view of the above, it can be concluded that LD has little effect on hearing impaired subjects' ability to lipread, but the question of whether or not there are differences between the normal and the hearing impaired subjects on the LD variable, remains equivocal. For LD, then, the practice of extrapolating results obtained on normal subjects to hearing impaired subjects is neither supported nor rejected. Further research would be needed to determine whether or not the influence of LD is significant, and whether it is different for normals as compared to hearing impaired.

Perfetti (1969b) gave three possible reasons for the significant inverse relationship he obtained between LD and sentence recall. The first reason was that there is more semantic information per word; second, lexical words are less predictable; and third, sentences with high LD may tend to have a greater number of underlying structures. At least the second and third reasons would negatively effect a subject's ability to lipread if he or she relied on clues related to linguistic content. It is assumed that is why there was a significant negative correlation between LD and lipreadability of sentences for normal subjects. Perhaps the hearing impaired subjects, because of their language deficiency, did not rely as much on linguistic context, and thus did not find LD to be significantly related to the lipreadability of sentences.

It is difficult to draw implications for therapy from the above results on LD. Nevertheless, future research should be directed toward the relationship between measures of sentence complexity and the lipreadability of sentences.

SUMMARY

Three linguistic factors were investigated for their effects on subjects' ability to lipread sentences. The factors were: vowel-consonant ratio (v/c), lexical density (LD), and sentence length (SL).

A review of the literature showed that the research on the effects of vowels and consonants, and sentence length on lipreading is somewhat inconclusive and thus the two factors are included in this study for further investigation. The third factor, LD, a measure of the semantic content load of a sentence, had not been investigated with regard to its effects on lipreading. Because LD has been shown to have an effect on subjects' ability to retain and recall sentences presented by tape recorder, it was thought that it may have an effect on subjects' ability to lipread and was included in this study.

Hearing impaired students between the ages of seventeen and twenty were screened for hearing, vision, general language ability and lipreading ability. After completing the screening, all of the students were administered three, fifty sentence lists which varied with regard to v/c, LD and SL. The sentences were administered to the subjects via video tape.

Normally hearing students between the ages of seventeen and twenty-one were then screened for hearing, vision, general language ability, and lipreading ability. Twenty normal subjects who passed the screening for vision, hearing and language ability were matched to twenty hearing impaired subjects on the basis of their age and the lipreading screening test. The twenty normals were then administered the three experimental sentence lists.

The experimental questions involved determining the relationship that each linguistic feature had on normal and hearing impaired subjects' ability to lipread, determining the relative importance of each feature for each group of subjects and a comparison between the two groups of subjects to determine if the features had the same effect on the two groups.

Pearson's product moment correlation coefficient was used for most of the analysis along with one and two way analyses of variance.

Based on the statistical analysis it was concluded that:

1. There is no relationship between v/c and lipreading ability for either group of subjects.
2. There is a relationship (although not strong) between LD and lipreading ability for normal subjects but not for hearing impaired subjects. However, the question of whether or not the two groups of subjects differed from each other on this factor remained equivocal.
3. There is a relationship between SL and lipreading ability for both normal and for hearing impaired subjects in that three word sentences were found to be easier to lipread than six or nine word sentences, and six and nine word sentences were of equal difficulty. The normal and the hearing impaired group of subjects did not differ in their ability to lipread the sentences of different lengths.

Suggested reasons for the results were given along with a discussion of the possible directions for future research for each of the variables studied.

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APPENDIX A

TABLE 6.—STATISTICS OF THE RAW DATA FOR 3-WORD SENTENCES

Sentence number	v/c ratio	LD values	Mean percentage lipreading scores for—	
			Normal subjects	Hearing impaired subjects
3	75	0	43. 25	19. 95
4	60	0	13. 30	19. 95
7	60	67	3. 30	31. 60
9	67	100	36. 55	51. 55
10	75	67	79. 95	88. 35
13	80	67	8. 30	8. 25
15	43	33	55. 15	41. 70
17	60	33	75. 15	47. 55
20	67	33	18. 30	35. 05
25	50	33	50. 15	45. 15
34	75	33	38. 20	34. 95
38	80	100	83. 30	60. 05
42	43	0	68. 40	43. 30
49	100	100	68. 30	80. 15
51	43	67	1. 65	24. 90
52	100	33	30. 10	28. 40
54	60	33	75. 00	76. 70
55	75	33	29. 90	14. 90
56	50	0	81. 75	71. 90
58	44	100	9. 95	31. 65
59	43	33	53. 40	34. 95
61	38	67	0. 00	11. 60
63	60	33	60. 20	76. 00
68	80	100	63. 50	45. 05
69	50	100	5. 00	3. 30
71	50	100	25. 05	27. 45
84	50	0	60. 05	61. 80
86	57	100	3. 30	10. 00
88	60	67	45. 15	68. 60
91	75	0	55. 10	54. 95
95	60	100	41. 50	43. 25
97	57	0	73. 50	56. 55
100	80	0	36. 60	71. 65
105	67	100	68. 45	81. 75
107	75	67	41. 55	31. 45
110	100	33	48. 25	31. 40
117	43	67	18. 30	39. 95
118	43	0	65. 05	31. 70
120	50	100	11. 55	16. 50
121	67	67	76. 65	66. 70
126	38	100	24. 90	13. 20
130	71	67	0. 00	10. 00
131	75	33	70. 05	78. 45
133	100	67	15. 05	5. 00
135	57	100	56. 65	48. 25
138	43	100	76. 85	60. 05
140	60	0	55. 05	40. 00
142	67	0	49. 90	31. 70
144	57	67	78. 35	63. 45
148	50	0	68. 45	38. 35

Note: 3-word sentence means for normal subjects equals 44.35, for hearing impaired subjects equals 42.18.

TABLE 7.—STATISTICS OF THE RAW DATA FOR 6-WORD SENTENCES

Sentence number	v/c ratio	LD values	Mean percentage lipreading scores for—	
			Normal subjects	Hearing impaired subjects
1	56	0	34.15	15.00
5	75	17	40.00	37.45
6	67	17	17.50	37.50
8	70	50	48.37	51.60
11	64	67	44.20	43.30
12	60	17	24.20	29.30
16	57	100	14.35	19.95
19	88	0	49.95	44.85
24	70	67	39.30	22.50
28	88	83	13.30	38.70
31	67	0	32.60	20.95
33	70	56	19.95	13.40
36	67	33	69.95	43.30
37	57	33	42.40	24.95
39	62	50	11.75	12.50
41	82	100	24.15	30.25
47	75	33	31.65	18.20
50	58	33	57.45	47.45
53	67	67	59.05	55.00
57	89	17	39.05	24.95
62	62	100	11.85	14.10
64	58	17	10.80	10.85
66	64	50	30.05	46.55
67	67	83	24.40	44.05
70	47	67	34.25	28.35
73	64	0	33.05	15.00
74	58	0	25.90	40.85
75	54	50	37.35	29.05
79	47	83	29.90	49.30
81	73	83	53.35	66.70
82	50	17	44.95	24.55
83	50	0	77.50	38.35
87	50	33	28.35	18.40
89	60	83	39.10	23.30
90	57	83	40.00	32.65
94	58	100	36.75	37.55
96	78	0	57.40	35.90
102	86	17	5.00	9.15
104	86	50	20.05	25.90
106	71	100	20.10	17.40
113	80	67	33.25	41.30
116	75	50	28.30	30.85
128	54	83	55.05	42.55
129	44	100	15.85	19.20
137	60	33	58.45	50.00
139	100	33	9.15	13.45
141	75	67	9.30	30.00
143	64	100	9.15	32.30
145	50	50	40.00	49.20
146	50	67	8.35	10.05

Note: 6-word sentence means for normal subjects equals 32.81, for hearing impaired subjects equals 31.16.

TABLE 8.—STATISTICS OF THE RAW DATA FOR 9-WORD SENTENCES

Sentence number	v/c ratio	LD values	Mean percentage lipreading scores for—	
			Normal subjects	Hearing impaired subjects
2	73	78	21.50	15.45
14	67	.22	43.20	28.70
18	47	89	13.80	13.20
21	48	67	53.95	45.05
22	71	56	48.45	49.90
23	59	33	18.20	33.25
26	60	44	11.65	26.05
27	59	22	20.35	22.65
29	64	44	30.35	39.35
30	67	89	7.75	16.05
32	65	22	61.65	23.30
35	53	33	6.05	6.05
40	63	44	62.90	59.50
43	69	11	83.45	28.80
44	67	78	.55	10.75
45	56	89	25.45	15.45
46	47	33	10.45	11.60
48	56	11	60.00	43.15
60	70	67	24.35	48.45
65	67	33	51.20	31.00
72	63	56	56.20	66.30
76	77	67	34.30	45.55
77	56	56	3.85	3.30
78	53	22	61.10	31.60
80	67	56	47.50	46.70
85	60	67	54.45	37.20
92	41	22	26.60	16.65
93	53	67	50.60	48.40
98	53	78	7.15	12.20
99	53	44	52.15	52.25
101	45	78	13.80	16.60
103	71	89	11.00	7.15
108	71	44	37.10	40.95
109	64	11	62.80	40.50
111	75	11	29.35	32.60
112	60	11	9.90	13.85
114	56	22	33.80	38.25
115	50	89	10.45	15.45
119	50	56	23.65	31.50
122	73	33	28.00	22.65
123	61	33	41.50	42.10
124	47	11	22.05	19.85
125	61	78	52.55	53.40
127	61	67	20.45	15.00
132	48	44	73.40	56.20
134	63	56	31.10	48.80
136	59	56	3.85	5.50
147	50	78	12.65	13.20
149	69	22	52.70	78.40
150	63	89	15.40	27.20

Note: 9-word sentence means for normal subjects equals 32.69, for hearing impaired subjects equals 30.95.

INDIVIDUAL READING

Lynn Coleman, teacher, Maryland School for the Deaf, Frederick

My name is Lynn Coleman, I teach at the Maryland School for the Deaf, and I have been asked to talk to you about an individualized reading program for deaf teenagers. If I had to give the program a title, I'd probably call it "Reading for Fun and Profit," because the nature of the program has as much to do with creating an atmosphere of enjoyment as with building reading skills.

In the course of this presentation I hope to accomplish several things. First of all, to put the program in perspective I'll explain a little about its background and origin. Secondly, I'll try to give you a feeling for the program's philosophy and structure. And finally, with the help of some slides, I'll try to show the variety of activities it includes.

Essentially the current program was an outgrowth of my first year's teaching experience (which I can now discuss without breaking into tears), and which might well have been called "Reading for Boredom and Frustration." Some other appropriate titles for this approach might be the "Shut-up and Pay Attention Method" or the "Someday You'll Thank Me for Making You Read This Method." I'm sure you're all familiar with this method and probably learned about it the same way I did—from first hand experience as a student. Having been an English major in college I had little or no training in teaching reading, so I fell into a pattern far too many of us use—I taught as I had been taught. The "Boredom and Frustration Method" has a fairly simple philosophy—the teacher is the center of everything. As a student in this type of classroom you learn that the teacher knows such things as:

1. What you should and should not enjoy reading (which of course determines what you will and will not read in that class).
2. What questions you will want to know the answers to as you read a selection.
3. The right answers to all those questions.
4. What vocabulary words you will need to learn to understand a selection.
5. When you do and do not really need to go to the restroom.

Although I was certain that from years of experience my students were quite familiar with these basic tenets, they were obviously less than enthusiastic about how much they would learn from me. As the year wore on I found I had two types of students: (1) the good kids—who were bored and frustrated but for some reason well behaved, and (2) the bad kids—who were also bored and frustrated and had decided to take it out on each other, the good kids, and me. At this point you might well ask how I knew they were bored and frustrated. I knew for several reasons: (1) the battles I had with them regularly to get them to do assignments, (2) daily comments from the kids such as "Why do we have to read this?", (3) class discussions in which I did all the talking, and (4) the looks on the kids faces—no one ever smiled. As if those weren't enough clues to tell me I was on the wrong track, there was the final crucial fact that led me to making some drastic changes: despite all my teaching, all the vocabulary lists with perfect dictionary definitions, all the questions about all those stories, the kids weren't learning how to read. Actually the only two skills they were developing were the ability to copy and memorize. Vocabulary definitions were copied from the dictionary. Answers to questions about reading selections were usually sentences or phrases copied from the selection because they looked as if they might contain the right information. Of course if the answers were wrong, I would eventually give them the right answers which would then be copied. When it was time for a test, they studied by memorizing all those copied definitions and sentences.

Of course I tried to discourage these terrible habits. I kept saying things like "Think for yourself," "Use your own language" and "Put your answers in your own words." But the kids knew better. For one thing, they knew that if they turned in a paper with their own language on it, it was sure to come back full of red marks, and besides, all the "right" answers were in the dictionary, or in the selection, or in the teacher's head. As far as the kids were concerned, it wasn't something you thought about; it was something you found, copied, and memorized for the test. Maybe they didn't like the system, but at least they had learned how to live with it. I hadn't. I kept asking myself what was wrong with these kids? When I talked with other teachers, I was actually relieved that they were fighting the same battles. True, some of the kids could memorize the right answers, but their retention over a period of time was so low that we ended up teaching the same thing over again.

Finally, in desperation, I started reading everything I could about education, and one day I found an answer that was simple but shocking. James Herdon, teacher and author, has written a book called *How to Survive in Your Native Land.*

One of the chapters in this book is titled "The Dumb Class." He describes the dumb class as one that cannot learn what it is supposed to learn—it just keeps making the same mistakes over and over again without learning from them. Although that description seemed to fit my classes perfectly, I soon discovered that he was not talking about the kids. The dumb class was the faculty.

We were the dumb class because we kept teaching the kids the same way and never learned from our mistakes. My kids behaved the way they did because it suited the method. They had learned something very important—how to adapt to their situation. That made sense since they had no choice, but, as a teacher, I did have a choice. Once I realized that the method I was using was actually reinforcing the habits I wanted the kids to break, I was determined to throw out that method and keep trying new ones until I learned enough to help the kids learn. After all, nobody wants to be stuck in the dumb class.

Enough of the gloomy background. The first thing I knew had to be changed radically was the kids' attitude. Somehow I had to convince them that they could think for themselves. I decided I'd better start with something very simple, so I introduced a hall pass and learned that my kids were suffering from something psychologists call "learned helplessness."

When a normal animal is exposed to a negative experience, like an electric shock, his natural reaction is to try to escape it. Dogs put in this situation soon learned they could escape the shock by jumping over a barrier. But another set of dogs was first put in a harness so that they could not avoid the shock. Subsequently, when placed in a box without a harness, they simply whined and accepted the shock. They had learned that they had no control over the negative experience, and so they gave up and took it. Eventually, after being coaxed and finally dragged over the barrier, the dogs learned that they were no longer helpless; but the longer they had been exposed to the uncontrollable shock, the longer it took for them to learn to control it themselves. A similar experiment done this time on college students had the same effects. So how does all this relate to giving my kids a hall pass?

The day I brought in the pass, I carefully explained that it was designed to simplify getting permission to go to the restroom or the water fountain. Instead of waving their hand frantically and waiting for my O.K., they were to pick up the pass, show it to me, and leave.

It took some of my kids three weeks to learn how to use the pass. That is learned helplessness. Of course some caught on fairly quickly, but they all started by raising their hand to get permission to leave their seat to pick up the pass. I ignored them, and some got pretty red in the face before they finally, in desperation, dared to get up, pick up the pass, and run out of the room.

So what does this have to do with individualized reading? The students were beginning to see that I was going to trust them to make some decisions for themselves. Obviously they did not all run to use the pass at once, but it provided the opportunity for their individual needs to be met. While the kids were learning to use the pass, I was busy searching for materials and designing a program that would hopefully have a similar goal—to provide for their individual needs in reading.

The experience with the hall pass taught me that I had better not try to introduce a whole new program overnight, so I began with a representation of what was to come—an SRA Reading Lab.

The reading lab introduced the fact that students would not all be reading the same thing at the same time. When I passed out the cards, they were surprised to find that each person had a different selection. They were one step closer to individuality. I had deliberately started with the easiest reading level in the kit, but I still had to do some talking to convince the kids that they could read the card and answer the questions on their own.

When they had finished answering the questions, I passed out the real shocker—the answer keys. At first they were sure I had made a mistake, and when I reassured them they were to check their own answers, the reaction was the same in almost every class—"Aren't you afraid we'll cheat?" Not only had they learned that teachers weren't interested in what they thought, and wouldn't accept their written language, but also that we did not trust them. I explained that they should not feel a need to cheat since I was sure they could answer most of the questions correctly, and besides it would not do any good since they were not going to get a grade on how well they did.

Watching their faces as they checked their papers was a real joy. For many of them it was their first real taste of success in reading. As the smiles appeared, they hit me with words I never expected to hear—"Can we do another one?" That was it. The "Boredom and Frustration Method" was dead.

Using the SRA Lab and similar materials over a period of about two months, I gradually introduced them to the fact that they would be working on different ability levels based on what was most comfortable, but still challenging for them. One of the most difficult concepts for them to grasp was that they would be graded on effort and use of time—not whether or not they got 100% on a specific reading activity. Finally they began to understand that the most important thing was that they try, that effort would be rewarded as much as success, and that if they didn't understand something, it was all right to admit it. Because they could see that I accepted them as individuals, I began to see an increase in their self confidence.

As their self confidence grew, I added more types of activities to the program and began to shift more responsibility to the students themselves. My role became that of a resource person. Students came to me for guidance in deciding what activity to do next. When they asked for help on a particular activity, they were no longer asking me to tell them the "right" answer—just clues as to how they might find it. I tried to encourage them to come to me freely for help, at the same time giving special praise when they did something difficult on their own.

Although copying has not been completely eliminated, it has definitely been reduced. Memorizing content serves no purpose because they're not studying reading as a content subject; they are developing skills thru practice. But that is not to say that content is unimportant. One of the main reasons this program is not only acceptable but even popular with the kids is that they are getting a chance to read things that are interesting. As they work on skills, they are free to choose from a wealth of materials. With the variety of activities and materials provided, and the freedom to design their own program to suit their needs and interests, the students cannot get bored.

But obviously some type of structure is necessary to guarantee that each student's needs are being met, and that they are all progressing toward the ultimate goal of improving their reading skills.

Most people who visit the classroom say something like "It looks interesting, but how does it work?" I will try to explain it to you as I would to a visitor.

When a student enters the room, he picks up his folder. Inside the folder are the two papers you have in front of you: the Skill Progress Chart and Daily Progress Chart (appended).

The Skill Progress Chart is really the core of the reading program. Broken into various categories of reading activities, it serves both as a guide to help students keep a balanced program and as a record of their completed activities. The students progress through the chart in round-robin fashion, doing one activity under each category and then returning to the first category to start the cycle again.

Seven of the blocks are aimed at building specific reading skills. When a student needs an activity to fit one of these categories, such as Vocabulary and Dictionary Skills, he goes to the appropriate section of the room and finds activity sheets for that skill. The activities are on various reading levels from A level, the easiest, to E, the most difficult. He chooses an activity that looks interesting and seems to be within his capabilities.

When he has completed the activity, he shows it to the teacher and then either checks it himself, if an answer key is available, or has the teacher grade it. At this point, the student and teacher discuss any problems he might have had and evaluate his performance on the activity.

Next the student records the completed activity on his Skill Progress Chart and notes how well he did on it. This note as to degree of success will be useful in helping him choose the correct level the next time.

He then records the category on the Daily Progress Chart. This chart serves primarily as a record of what activities the student does on any given day. It is in calendar form and covers one nine-week grading period. Teachers use this chart to keep track of the students' pace, since they work at a rate which is comfortable for them.

After completing one activity in each of the first five blocks on the Skill Progress Chart, the student is allowed up to an hour of free reading. During this time he may read a paperback book, magazine, newspaper, story, or any other material in the room. He may also choose to read something he has brought in or he may elect to go to the school library.

After free reading comes the SRA Reading for Understanding Kit which I highly recommend for three reasons: it teaches critical thinking, it offers practice on a wide range of ability levels, and the kids love it.

RFU is followed by Looking for Information, the sixth specific skill area, and then current events. During this time the student usually reads something from a newspaper. Even the newspapers come in various interest areas and ability levels including the Xerox publications *Know Your World* and *You and Your World*, *Grit*, the local *Frederick Post*, and *The Washington Post.*

The eighth skill area is Learning from Context Clues, which is followed by a block for reading games and puzzles, such as Scrabble and crossword puzzles.

When he reaches the thirteenth block, "Let's Talk About It," the student chooses something he has read, fiction or non-fiction, anything ranging from a newspaper story to a novel, and brings it to the teacher for discussion. Since this will take a fair amount of time, students sign up for their discussion on a schedule sheet ahead of time.

The final special block allows for any type of reading activity or special project an individual student might want to reserve some time for.

Needless to say, this type of program keeps a teacher moving. Fortunately at M.S.D. we are using a team teaching approach. With two teachers in the room one usually stays at his desk to grade completed work, while the other circulates trying to answer an endless stream of questions.

Once kids get used to a lot of independence and success, they're twice as impatient to get things moving when they get stuck. But of course it's rewarding to see them impatient to learn. In the old system, I had been asking and answering all the questions—I was talking to myself. Now I'm answering my students' questions and communicating with them.

Besides answering questions, the circulating teacher is keeping a check on how well students are using their time. At the end of each class period, each student receives an effort grade that reflects how much of the period he spent on some purposeful reading activity.

These grades are posted in the front of the room for all to see. They are a tremendous source of motivation because they provide immediate positive reinforcement for achieving something every kid is capable of—doing his best. The kids know their efforts will be rewarded, regardless of their ability level. Those who have serious problems with reading especially appreciate the justice of this system since they know the good readers can't get away with goofing off—a fact which required considerable adjustment at first for the good readers.

But I don't want to give the impression that the students work entirely independently of each other. Actually they are encouraged to work together and to share interesting things they've read with others. Often, if a student is confused about something I haven't time to explain, I refer him to another student who I know can help him. Of course this has fringe benefits as it raises the ego of the "expert" to whom he has been referred. Every kid should be allowed to play teacher once in a while—it really brings out the best in them.

Students also work together on various all-class activities. On group activity days, work on Skill Progress Charts is suspended. A few of these group activities are: (1) the very popular crossword puzzle contests, for which students competing as teams scramble through all kinds of reference materials to go in the spaces; (2) SRA Rate Builders, designed to teach speed and comprehension; (3) group vocabulary lessons which require only the students to be able to associate the written word with the appropriate sign; and (4) Password—the fun way to strengthen vocabulary.

So that's an overview of what "Reading for Fun and Profit" is all about. It's a program that tries to be consistent enough to guarantee that all students are treated equally, and flexible enough to see that their individual needs are being met.

Getting a program like this started isn't something that happens overnight, but when you look around the room and see a lot of reading and a lot of enthusiasm, you get the feeling it's all worth the effort.

Name: John Smith
Class: H-2

READING SKILL PROGRESS CHART

VOCABULARY & DICTIONARY	READING FOR FACTS	READING FOR MAIN IDEA	USING FACTS TO FIND MEANING	FOLLOWING DIRECTIONS
1.+ Skillbook 8 p. 24 2.✓ B.R.S. p,19	1.✓ "Blind Pony"	1. S.S.S. Ⓒ #15 70%	1.○ B.R.S. p. 65	1.+ S.S.S. Ⓓ #4
FREE READING!	SRA READING FOR UNDER-STANDING KIT	LOOKING FOR INFORMATION	CURRENT EVENTS	LEARNING FROM CONTEXT CLUES
1. 9/15/73 Novel	1. △2 - 50%	1.✓ Ditto #43	1. You & Y.W.- 9/1	1.+ S.S.S. Ⓑ #3
GAMES & PUZZLES	SRA POWER BUILDERS	"LET'S TALK ABOUT IT"	SPECIAL	
1.✓ "Lincoln" Crossword	1. IIb Orange #4 56%/100%	1. "Watergate" Fred.Post 9/10	1. Novel - Go Ask Alice	

Name: John Smith
Class: H-2
Quarter: I

READING DAILY PROGRESS CHART

Month	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Aug. Sept.	28	29	30 School starts	31 Orientation	1 Materials
Sept.	4 Voc. & Dict.	5 Voc. + 1) Dict. 2) Facts	6 Main Idea	7 * SRA Rate Builders	8 1) Main Idea 2) Using F
Sept.	11 All-Class * Voc.	12 Following Directions	13 * 1) Voc. Quiz 2) Free Reading	14	15
Sept.	18	19	20	21	22
Sept.	25	26	27	28	29
Oct.	2	3	4	5	6
Oct.	9	10	11	12	13
Oct.	16	17	18	19	20
Oct.	23	24	25	26	27
Oct. Nov.	30	31	1	2	3

TEACHING, LEARNING, AND MENTAL HEALTH

James L. Collins, Ph. D., Faculty for Exceptional Children, Ohio State University, Columbus

The Purpose of Schools

The purpose of schools in our society is the subject of continued and oftentimes heated debate. Please note that the reference is to purpose and not to goals, a distinction which is of significance. Examples of differing opinions about the purpose of American education and schools are exemplified by statements of the Educational Policies Commission of the National Education Association (1961) and by Theodore Brameld (1961) writing in the Phi Delta Kappan. The NEA is of the opinion that the development of the ability to think is the primary purpose of our schools. Brameld, on the other hand, feels that the development of world citizenship is the primary purpose of these same schools.

Educators of deaf children are certainly not strangers to controversy, not only as to what should be taught, but also as to how things should be taught. Kopp (1968) has spoken to this point when she refers to the varying emphasis placed on the teaching of communication and cognitive skills and to subject matter content. Indeed, the need to spend huge quantities of effort and time in developing language, communication and cognitive skills is the very reason for the existence of education of the deaf as a specialized discipline.

The purpose of this paper is to refocus some thinking about the role of the school and particularly the teacher in the educational process. In order to do this, the disciplines of sociology and social psychology will be utilized. Particular attention will be given to teaching and learning as parts of a larger process which has been termed the socialization process.

THE SOCIALIZATION PROCESS

A full description of the socialization process is not possible with the time constraints imposed on us today. However, a detailed explanation is not necessary for the purposes under consideration.

Hollander (1971: 148) refers to socialization as the complex process by which an individual is led into the ways of a society. Each individual, at the time of birth, has the potential for a wide variety of behaviors during his lifetime. But, as Child (1954: 655) has noted, he is "led to develop actual behavior which is confined to a much narrower range—the range of what is customary and acceptable for him according to the standards of his group."

Thus, each child born on this earth (who is not in some way linguistically impaired) has the potential for learning and using comfortably any of the thousands of languages utilized by humans. However, the odds are great that this child will probably learn only one of these languages well—that language utilized by other members of his culture. In countless other ways this infant will have his behavior structured and shaped by members of his culture until as an adult, he exhibits only a small fraction of the behaviors of which he is capable.

An excellent example of this phenomenon is the process each of us goes through which determines our food preferences and indeed which foods we are alllowed to eat by our group. If we look at the list of possible foods listed below, we can immediately identify which ones are preferred or allowed in our society.

eel
trout
monkey
whale
cow
insects
hog
snake
horse
snails
sheep
carp

Although only certain foods would be acceptable to this group, the fact is that all of these foods are enjoyed by some people somewhere on earth. Foods are used as the example here but we could also observe the same phenomenon in such human behaviors as religious practices, political beliefs, work habits, sexual behavior, recreational practices, ad infinitum.

Societies have organized various formal mechanisms for socializing new members. Institutions such as the church and schools are obvious examples. Although these formal institutions play an important role, the socialization process actually is accomplished for the most part through unorganized and informal procedures via contact with the family, other adults, peers, and mass media outlets such as books, radio, and television.

Cuber (1968:167–168) states that each person is molded by three separate sets of influences which jointly determine the behaviors he will exhibit. These influences are (1) his inborn characteristics, (2) the culture and subcultures in which he lives, and (3) the specific noncultural experiences he has.

The inborn characteristics of the person refers to inherited attributes such as sex, body size, physical features, and intellectual abilities. The cultural and subcultural influences which influence a person refers to such factors as the nation and even region in which a person is born, the religious, political, and vocational practices of his group, and the socio-economic status of his family. Specific noncultural experiences refer to experiences the person has such as exposure to war or other catastrophic events, a warm, loving relationship with another person, or some fortuitous event.

The socialization process, then, should be viewed as a complex process of learning which each individual passes through. Although schools and teachers are typically credited with being that component of a society responsible for the learning process, the academic subject matter learned at school actually accounts for only a fraction of the material a child learns. This leads to a consideration of two highly significant features of the socialization process, explicit learning and implicit learning.

EXPLICIT AND IMPLICIT LEARNING

Hollander (1971:121) refers to two facets of learning which he terms explicit and implicit. Implicit learning is defined as the acquisition of knowledge or behavior when there is no deliberate attempt to teach or learn this knowledge or behavior. Explicit learning on the other hand occurs when either or both the intention to teach and/or learn is present.

What is unusual about these two types of learning is the relative difficulty with which much explicit learning occurs as compared to the ease with which implicit learning occurs. Additionally, what we learn implicitly is usually accepted completely and found to be congenial. Few of us, for example, question the rules of our society about monogamy, the right of the government to tax, or laws against stealing. As Erich Fromm (1949:5) has put it, society shapes experiences in such a way that ". . . people want to act as they have to act and (therefore) find gratification in acting according to the requirements of the culture."

One of the tragedies of deafness is the limited amount of implicit learning which deaf children acquire when compared to the hearing population. Because the greater portion of implicit learning is transmitted primarily via the auditory channel, or secondarily through the written mode, the amount of material that deaf children can acquire implicitly is curtailed traumatically. Thus, the education of a deaf child becomes a laborious task for teacher and learner with tons of information being explicitly taught to deaf children which hearing children learn with no apparent effort through implicit means. Of even greater concern is the fact that to date no one has been able to demonstrate the ability to systematically fill the gap for deaf children through explicit means.

IMPLICIT LEARNING AND SELF-CONCEPT

Although the ability of deaf children to learn implicitly is curtailed it is not completely lacking. This means that the deaf child shares with his hearing peer a common characteristic—the judgment of his own worth and the development of his self-concept as a result of the way people who are important to him implicitly and subtly respond to him. The appropriate development of the child's self-concept goes far toward determining his mental health throughout his life. When we consider people who are important to a child we must include the mother, father, siblings, grandparents *and* his teacher. The role of teachers of the deaf in the development of a deaf child's self-estimate is probably more significant than teachers are to normally hearing children. This is probably true because of the earlier age at which deaf children enter school, the dependence they have on their teachers for constructing learning environments, and the intense relationship which often characterizes the teaching-learning environment in educational programs for the deaf.

If it is true that teachers are important to the development of the child's self-estimate and hence his mental health then it seems critical that teachers be aware of the implicit learning they are responsible for as well as the explicit learning they are paid to be responsible for. This is not to imply that a teacher's actions toward a child, hearing or deaf, will wholly determine his mental health—but certainly the potential for much good or much harm exists in the relationship.

Research by Madsen (1968) suggests that teachers of normally hearing children make far more negative remarks to children than positive remarks. His data suggests that for each positive statement or act the teacher makes there will be four negative statements or acts. Learning theory has not only pointed out the futility of negative reinforcement as a teaching technique it has also described its detrimental effects on the development of positive self-concept. Although there has been no research in the education of the deaf which parallels Madsen's work there is no reason to assume that teachers of deaf children are any more positive toward their charges than are teachers of hearing children. In fact, it seems safe to assume that because of the need to explicitly instill in deaf children a language, communicative ability, and thousands or millions of other behaviors and knowledges which hearing children learn implicitly, teachers of deaf children may unwittingly be more negative than teachers of hearing children. Even if the data turns out to be the same for the two populations it is no reason for complacency.

IMPLICATIONS OF DISSONANCE THEORY

An important concept which has grown out of social psychology is that of the human's inability to live with cognitive dissonance. A brief and barely adequate discussion of this concept will be presented here and those who are interested in the concept should pursue the matter in a standard text from social psychology.

Simply stated, dissonance theory tells us that a human cannot tolerate observations or perceptions which do not fit his or her previously established mental sets. If we observe Mr. Jones, whom we have always thought to be a good fellow, to be grouchy and irritable we will try to find some socially acceptable explanation for his behavior which will allow us to keep our positive mental set toward him. If on the other hand we observe Mr. Smith, whom we have always regarded as a non-desirable person, do some kind of a generous thing we will probably look for possible ulterior motives on Smith's part which will allow us to retain our negative mental set toward him. The simple way of summarizing this phenomenon is "Don't bother me with facts; my mind is made up." Thus, most adults are able to withstand considerable negative treatment from others and still maintain a positive mental set about themselves, providing they already possess this set.

Children, however, would seem to be quite another matter. Because of the child's extreme dependence on teachers, parents and other important persons in their environment they are often more critically aware of and responsive to the way others explicitly and implicitly behave toward them. The child's task is usually not one of maintaining a positive self-concept, but of desperately trying to build one. It therefore seems not only appropriate but a matter of urgency that we teachers endeavor to ascertain more clearly what our behaviors toward deaf children are and then try to find ways to change our behaviors where necessary in order to assist children to grow toward good mental health.

ASSESSMENT AND GOAL SETTING

Before anyone can begin to bring about improvements in his own behavior or the behavior of his students it is only logical that the person's capabilities be assessed as accurately as possible. In the case of students it will probably be more possible to start with the assessment of skills having to do with explicitly taught subject matter. The assessment of capabilities through standardized achievement or intelligence tests is not the assessment referred to here. Rather, I am referring to the assessment of the specific skills and behaviors a child possesses which make for success in the academic and social realms. Such an assessment will make more possible the establishment of realistic and attainable goals for each child. The attainment of these goals should hopefully lead not only to a positive feeling about himself on the child's part, but also on the teacher's part.

More specific assessment and educational planning are certainly not panaceas for the development of good mental health in children. They are, however, methods which can and should be utilized to help him in this process. It seems important when working with deaf children, who must explicitly learn what they can of the vast amount of material which others learn implicitly, that we sharpen our assessment and educational planning to the very highest degree.

SUMMARY

In closing, I would like to suggest that we as educators of deaf children do the following things to help our students toward the establishment and maintenance of a positive self-concept and good mental health.

1. Consider the purposes our schools can and should serve in the education and development of deaf persons.
2. Realize that learning which occurs within the classroom walls is only a portion of the learning which takes place in the more global socialization process.
3. Understand that explicit learning accounts for only a small portion of the knowledge and behaviors acquired by hearing persons—and try to find ways to substitute explicit means to close the information and experience gap which now typifies the average deaf child.
4. Find means of monitoring teachers' implicit behaviors toward children in order to become more positive toward them in an appropriate fashion.
5. Be aware of the fact that our implicit behavior toward children is at least as important as our explicit behavior. Explicitly telling a child he is adequate does not compensate for repeatedly letting him know he is not adequate.
6. Remember that it is of vital importance to assess children's abilities in both the explicit and implicit realms in order to determine the most needed educational goals and to plan the means to achieve them.

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THE VARIOUS ASPECTS OF GROWTH IN READING ON A PRIMARY LEVEL

Sister Maura Costello, teacher, Cleary School for Deaf Children, Ronkonkoma, N.Y.

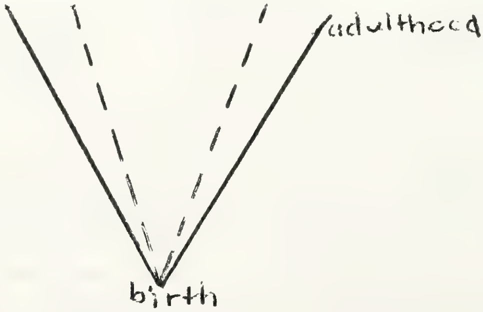
I am happy to be with you and hope to share some of my experiences of having worked with deaf children for several years. Reading is one of the most interesting of areas and, of course, permeates every aspect of the curriculum. It is the key to success in all content areas—social studies, science, math, etc.—and thus might well be one of the most important areas of competency to be developed during a child's lifetime. I consider my immediate purpose to be to focus in on the subject of reading itself with very natural references to its sister-subject, language.

What is reading? According to Cushenbery, it is more than "talk written down." It is not a simple act of just pronouncing words. Reading is the complex act of recognizing visual symbols and interpreting these symbols in terms of the reader's background of experiences. It is a complex act consisting of word perception, comprehension and reaction. (1969: 1)

Within this definition, we meet the various aspects of reading which we propose to accomplish through a step-by-step process. And this is truly what I have found it must be with our deaf children, generally speaking—a step-by-step process. I have come across a few deaf children who can and do "catch on" to the interpretation of written language with very little help. And these should, by all means, continue this growth as they are capable. But I think you will agree that there is a very definite graduated process we must go through.

Although I believe the word *education* to mean the "leading out" process—the articulation, so to speak, of all that lies within—the old adage, "You cannot give what you do not have" rings true also, and so our job of "pouring in" language and experiences is a very definite step in the process.

Here is a picture of a "cone of learning" which symbolizes for me the growth in learning which occurs in anyone.



The solid line cone represents hearing children and the dotted line cone, the deaf. It seems to me that each year's work and experiences, instead of building upon the previous year's, in a perfectly vertical manner, broadens out to encompass even more. A person draws new conclusions, makes new generalizations, forms broader concepts from stage to stage. A hearing child's language and reading growth enables him to broaden at a greater rate, but it seems to me our deaf children also can grow very broadly in the area of *knowledge through reading*, if we are very careful to give him the study skills and tools for learning, independence and a sense of accomplishment and the atmosphere for discovery and for transfer of learning which is so vital to us all. To refer back to the cone for a minute, the deaf child's profile is still extending outward, so that, given enough time, he can reach some or all of the same goals as hearing children according to his abilities, etc. These are general statements, but concretize for me a picture of the process of learning.

With that introduction, I would like to briefly outline what I hope to share with you today.

I. Some general principles of reading:
  A. Teacher's point of view.
  B. Child's point of view.
II. Outline of:
  A. Aims and skills for each age level.
  B. Methods to accomplish these including general practical ways I have tried to get reading across.
III. A week's lesson plan on one story, using behavioral objectives.
IV. Some characteristics of problem children and ways of meetings their reading problems.

I. Some general principles of reading: (Cushenbery, p. 3–6.)

A. Teacher's point of view:

1. Effective reading instruction is based on the individual needs of each pupil.

2. Proper instruction in reading for individual children is based on a thorough analysis of each pupil's strengths and limitations in the basic reading skill areas, as well as his instructional level. Therefore, programs and procedures must be established to meet the individual reading needs of each pupil. And in order to determine what these needs are, individual testing and diagnosis are imperative, some forms of which are:

(*a*) teacher-made tests
(*b*) informal inventories
(*c*) standardized tests
(*d*) teacher observation

I feel that after a few "getting acquainted" weeks, some test should be given to concretize the direction the teacher should take in determining her behavioral objectives for each child. In addition, the teacher should test to see what sense modality is the best for each child; in some cases it may be hearing, others, vision, others taction.

3. The teacher must use a variety of approaches with different children. The above mentioned modality approach enters in here also, as well as the many and varied techniques and methods which will be described later on.

4. The concept of reading readiness must be made a part of the reading program at all educational levels. This means that experiences will not be forced on any child at any age if the stage of the child's development is not adequate.

5. Reading program should be more preventive of problems than remedial.

B. The child's point of view:

1. He will learn to read only if he himself has properly interiorized motivation, which includes:

(*a*) a purpose for reading such as to obtain new knowledge. This statement alludes to a very important aspect in all areas of learning, namely, stating very specifically for the child the behavioral objectives he is expected to attain,

(*b*) a feeling of success and accomplishment,

(*c*) some enjoyment.

2. A readiness for reading (see above #4). It is the teacher's job to help him reach this level of interior motivation by motivating him from without initially. Once he feels success, his self-image soars and he possesses one of the key factors in learning—namely, self-confidence.

II. Now just before I continue with the outline of skills for each age level and some methods and means of accomplishing them, I would like to express some important general considerations in teaching reading to the deaf. (Wallin, 1960, p. 57.)

The teacher consciously directs her efforts toward developing the concepts and vocabulary which will occur at the pre-primer and primer level long before she introduces the book to the children. If necessary, the teacher structures the classroom situation in order to prepare the child for these new learnings and creates innumerable opportunities for repetition. For example, any new learning such as "like" should be taught and retaught in all its aspects—lipreading, speech, auditory training and writing as well as reading (news and experience charts).

The Manuals which accompany the basic series, although designed for hearing children, are an essential part of the teacher's preparation for teaching reading to the deaf child.

Phonics is recognizing the word through associating the sounds with the letter symbols.

Phonics as a tool is used most effectively after children have developed some facility in oral language. have an interest in learning to read, have acquired a small stock of sight words which they can read fluently in sentences and have begun to notice similarities and differences in words.

The teacher recognizes that children's ability to profit from instruction in phonics differs greatly. Care should be taken that natural sounds should be given without exaggeration of facial expression. More specifically, I hope the boxing off of all the skills will help present a clearer picture.

Skills	Age 5 to 6—Starter concept preprimer	Age 6 to 7—Book 1 [1] Book 1 [2]	Age 7 to 8—Book 2
Reading readiness: A level of growth when child can read without obvious discomfort.	Left-to-right eye movements and return sweep memory development.	------------	
1. Independent word recognition:			
A. Recognize whole words by sight (correlation with language and meaning of word).	Gradual buildup of sight vocabulary.	------------	Figurative language, multiple meanings of words; idioms; colloquial phrases and expressions.
B. Analysis of words (phonics) (correlation with speech) for some oral reading (Pope, 1967: 66–67).	Recognizing consonant sounds and associating them with letters—initial position.	Final position------------	Blending consonant and vowel sounds for independent attack of the pronunciation of a word (maybe 3- to 9-yr-olds).
		Memorization of long and short vowel sounds and categorizing them as such.	Consonant blends and secondary spellings.
C. Using context clues	------------	Correlated so much with language.	This is a comprehension skill also.
D. Using the tools of structural analysis.	------------	Recognizing root words forming plurals.	Recognizing compound words, suffixes, prefixes. contractions, possessives, abbreviations.
		Rhyming words------------	

Skills	Age 5 to 6	Age 6 to 7	Age 7 to 8
E. Use of dictionary	ABC book	Pictionary classification of objects and words.	First picture dictionary use of index (and table of contents) alphabetizing use of different dictionaries and encyclopedias.
2. Comprehension	Following directions sequencing of puzzles and picture stories.	Sequencing of written stories and ideas.	
	Memory development	Interpreting various punctuation marks.	Reading to find the main idea—choose a title.
	Recognize and comprehend simple sentences.	Reading to select specific significant details—answer specific questions of teacher.	
			Differentiating between fact and opinion.
		Developing ability to predict outcomes and anticipate events, to arrive at conclusions and generalizations.	
		Riddles	Analyzing cause-and-effect relationship.

Reading readiness methods

Frostig materials, storytelling, left to right perception activities, games, missing parts, paint-to-tell a story.

Independent word recognition methods

Matching print; show and tell—guess what I have; pictures; news, trips, labeling, listing jobs in school, word configuration; writing experience stories; write a book; my book of special words; illustrations of idioms, e.g., down in the dumps; questions on blackboard; opaque projector; symbol accentuation.

Methods and ideas

Use of dictionary.—Classifying pictures; who-furniture-fruits, etc.; go to library and look up words; reference books; how to spell a word; get meaning of a word.

Comprehension.—Games, read directions; how to make something; dramatization with oral reading; "said" sentences; transparencies, what would they be saying?; transparencies of the reader; children read each other's work and see if they can understand its contents; comprehension sheets and oral comprehension questions; individual instruction using filmstrips and books; Project Life; pronouns go back to nouns; films—stop machine—read captions; filmstrips—read captions; use of games—read rules; when asking questions in a story be sure there is a true comprehension required, *e.g.*, riddles; draw a picture of the printed story.

To achieve the goal of cultivating a genuine, lasting desire to read on the part of every child have:

A. Ample time for free reading—a library corner.
B. Dramatizations of stories.
C. Discussions of various books by individuals or group.
D. Book exhibits as "interest getters."
E. Art activities.
F. Storytelling—some of the desirable outcomes of which are:
  1. an awareness that story books proceed in a front-to-back direction,
  2. sequence idea,

3. attitude of respect for and proper handling of books,

4. an ability to participate in group learning in gradually lengthening time spans,

5. an ability to select, on the basis of preference, a story for the teacher to read to the group and the desire to express that preference. (Wallin, 1960, p. 16.)

III. We use Scott, Foresman *Open Highways* Reader. (Robinson, Monroe, et al, 1968) Here is a set of behavioral objectives planned by the teacher for one week on one story.

A. Monday: Readiness

Objective: That each child dramatize knowledge of each new vocabulary word or phrase. (The words or phrases should not, if possible, be entirely new. Hopefully, the child had a preview of them before.)

B. Tuesday: Readiness

Objectives: 1. That, given the words, each child demonstrate his ability to use the vocabulary by filling in blanks correctly in given sentences.

2. That each child read the story from the book.

C. Wednesday: Guided Reading

Objectives: 1. Using transparencies, that each child participate in a dramatization of the story.

2. That each child join in responding in a non-written form to questions.

3. That each child respond to non-written questions by pointing to the answer in his reader or on the transparency.

D. Thursday: Skill

Objective: That each child respond in a written form to a set of written comprehension questions.

E. Friday: Skill and Enrichment

Objectives: 1. That each child respond to the exercises given in the workbook.

2. That each child draw a picture from the story.

IV. Types of Children: How to help reading problems:

1. Bright—keep them going—let them discover.

2. Mary: *Problem A*—

Substitutes words.—bear for bean, etc., because she has poor scrutiny.

Response A: Go more slowly; show her the sounds—be sure she knows the sounds and demonstrate, being careful about what sounds are in a word. Use the tachistoscope for quick recognition as she progresses.

Problem B: Word by word reading with no comprehension.

Response B: Go back to categories of words and classifications; make her act out short sentences—Jump up—Fall down—Fall down on the floor. Be sure she knows that "on the floor" is *where*, etc.

3. Kenneth: *Problem A*—No interest.

Response A: Write your own book on what you discover he is interested in; read many stories; label his creative materials.

Problem B: Has no analytical skills.

Response B: Drill on sound work and apply it immediately to words.

4. Anthony: *Problem A*—Reversal d b.

Response A: Perceptual motor activities.

Problem B: No other way of word growth except memorization.

Response B: Slow, repetitive work on "sounding out" words.

In conclusion, I would like to invite you to share with me and with everyone some of the techniques and materials you may have used in your reading, or to discuss any thoughts or questions you may have. If I can answer them, I will. If not, I am sure someone else in the group, or else the reading experts who are at this convention, could help us out.

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THE "SPECIAL" DEAF CHILD

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When I first started to work with deaf children, I began under a superintendent who believed that teachers of the deaf should be houseparents for a year before going into a classroom. During the months of actually living with the deaf, a teacher learned how they played, how they interacted with each other in the dorms, how they worked, how they thought, how they expressed themselves, and how they reacted to all the joys and stresses involved in their encounters with society. With this as a background, the teacher was in a better position to go into the classroom to teach them.

As a result of this experience, I was never able to understand why so many teachers of the deaf considered one educational system suitable for all deaf pupils. The schools I taught in were mostly oral. However, several did make provision for the child who did not grasp speech or lip reading by placing him or her in a class with a deaf teacher. Here finger spelling and some signs were used. But there seemed to be some kind of a stigma attached to these classes by most teachers. Yet, in my experience, the pupils in these classes had better written language and were better readers than those we were turning out from the oral classes.

I have always been greatly concerned about the welfare of the child who never seemed to be able to produce "speech" or to understand lip reading. They vegetated in oral classes unless other provisions were made for them. Children with multiple-handicaps usually fall within this category. As the number of pupils with special problems increased in the last few years, I became more involved with them and for several years had a "special" class of multiple-handicapped deaf children.

The multiple-handicapped deaf child needs an expressive and receptive language just as every other child does. Much of the frustration of these deaf children is due to the lack of a satisfactory means of communication. Because of his multiplicity of handicaps, he usually can't rely on just one form of communication, but resorts to a variety of ways of expressing himself. Speech, lip reading, auditory aids, writing, drawing, pantomine, gestures—all help in this complicated task. However, Visible English is probably one of the most versatile and practical methods in use today.

Very often these children had gross motor problems. We used to spend a fair amount of time learning how to run, jump, hop, skip, and climb. We included them in all primary outings and made several on our own. They learned how to behave on the bus, out in public and in crowds of people. Such experience helped to build their self-confidence and to make them feel that they were a part of our community. We encouraged the parents to do the same. School activities included pictures, films and write-ups before we went; and a review of these when we returned, along with appropriate discussions. We also did handwork and wrote up our experiences. Finger spelling was used in all these projects.

Most of our everyday academic work revolved around the children's daily activities. We tried to use and teach what was meaningful to them and could be put into immediate use. In this way, the finger spelling and printed word had an immediate value and there was more incentive to learn it.

I have always expected a fairly high standard of work, but have tried to balance my expectations against what I believed the child was capable of doing in the light of his handicaps and mental abilities. You only get what you expect and these children soon know what your standards are. If the child is able to answer the question in a complete sentence, that is what I expect. But if he can only answer with one word, than I accept that till he is capable of giving back more using finger spelling or writing.

The family of a multiple-handicapped deaf child has to deal with the problems arising from a number of handicaps, not just those from one disability. Often they are overwhelmed by the task, and give up. In most cases they have received little or no help from clinics or the medical profession, and have wasted valuable time and money searching for help. These children are often later in starting school than the normal deaf youngster. In reality, they should be in a pre-school or nursery at an earlier age to acquire ways and means of overcoming their multiplicity of handicaps; to learn to be as independent and self-reliant as possible, rather than the spoiled, dependent youngsters we get; to learn to socialize and communicate with others in an acceptable manner; to give the parents a chance to relax and live more naturally as a family with the other siblings.

An article, published in an issue of The Teacher of the Deaf during 1971, has a few words of caution—finger spelling is not "taught," but is learned through "use." Teaching finger spelling does not teach language—but language is taught through the use of finger spelling.

In all the types of handicaps mentioned, the frustration and emotional problems often gradually disappeared as the child realized that he could express his wishes and thoughts through finger spelling, and that he was assured of being understood by others who in turn, finger spelled back to him. His school work improved and he began to interact with the other pupils in the class. This carried over to better socialization at home and in his neighborhood.

In a short discussion similar to this it is impossible to cover all of the various types of multiple handicapped deaf youngsters that have been in my classes—the mentally retarded, the emotionally disturbed, the child left deaf from a disease, or from accidental poisoning. So I shall deal with only a few in detail.

Visible English acts as a physiotherapy exercise for multipled handicapped, especially the cerebral palsy child. It helps him to improve his fine motor co-ordination, and finger and hand control. His printing, cutting, colouring, and handwork usually all improve. The C.P. child can't control the muscles of the organs of speech, such as the tongue, vocal chords, or jaws, any more than he can control his other muscles. So he has poor speech. Due to the lack of control of the eye muscles, he usually does not see the lips properly for speech reading. So he has poor lip reading. Finger spelling is larger and easier to see. He is able to follow instructions better and to communicate more clearly.

Several years ago I was one of a group of teachers who had contact with a number of teenage deaf-blind students who had been taught throughout their school life by the use of finger spelling. We were all amazed at the accuracy of their language and asked ourselves "Why?". These students were more severally handicapped than our normal deaf students, but had superior language. They received speech instruction, but this was not the answer. We decided that it was because they received all their instruction through finger spelling and this was more accurate than speech and lip reading. I have had small deaf children who had partial-sight due to cataracts. The larger finger movements were easier for them to see and it was not long before they were attempting to copy the finger-spelled words used in the class. There was less strain on the eyes and this lessened the danger of the child eventually becoming deaf-blind.

A number of drugs cause deafness in their use to cure a disease. Probably one of the most tragic results is that caused by thalidomide. This particular child's parents were both medical doctors so it was a terrible shock when their child was born deformed after the mother had taken one-half tablet of thalidomide. Besides being deaf, his right side was affected with some paralysis, particularly the muscles of the face. For several years he sat in an oral nursery for deaf children—left behind because he could not make progress through speech and lip reading. Then he was transferred to our school. By this time, a frustration and emotional problem was developing and he was beginning to withdraw from those around him. I used mostly the printed word and eventually finger spelling. Until he had experienced some feelings of success, I felt he would not progress. It took several months, but eventually we saw some reaction. At first he went from being a shy, withdrawn, frustrated child to the other extreme—show-off, extrovert, somewhat belligerent. But this eventually righted itself. It took many discussions to show the mother that he needed finger spelling for communication. With poor eyesight and the facial muscles partially paralyzed, he could not be expected to progress in an oral situation. But she was very good and we were all very excited when both parents came to the finger spelling classes, as up to this time the father had taken little interest in his only son. The child's emotional difficulties gradually disappeared.

To most of us, learning or knowing a foreign language is a desirable accomplishment, but for a small deaf child, a foreign language in the home may be an added handicap. In the class of seven pupils that I had a year ago, two went home to French-speaking parents, one to Greek, one to Italian, one to English and two to French fathers and English mothers. A great deal of confusion and frustration very often developed. One mother said "When I talk in French, he does not understand. But when I use English, he does." After I explained to her why this was, she promised to use English more in the home. But that is difficult when every one else uses the "foreign" language and only the deaf child uses English. We asked the parents to use Visible English. Some co-operated and learned to finger spell very well. Their own English improved and the deaf child's frustration problems were alleviated. In cases where parents did not co-operate, older brothers or sisters often learned to finger spell and they helped the deaf member of the family. These siblings often acted as interpreters between the parents and the deaf child.

The time may come when pregnant mothers will take the precaution of being vaccinated against measles, but until then we will continue to enroll pupils whose deafness is caused by rubella, or maybe some other similar disease that the pregnant mother had. These children often have more than one handicap. The girl I had in my class last year had cataracts on both eyes. Until these were removed she was to all intent and purposes, a deaf-blind child. She wore strong glasses, but her eyes shifted continuously. She was very awkward, and she had very poor fine motor control. She could do nothing in the way of cutting, coloring and handling a pencil. She was very dependent, expecting everything to be done for her. The bus drivers told us that they still carried her up and down stairs at home. She was very "mean" to anyone who went near her and had some very unacceptable habits. It was a long struggle and we sometimes felt we were making little headway. So you can imagine our surprise and pleasure when she started to respond. She began to share her chips and chocolate bar with the other pupils. She learned to dress and undress herself even to her outdoor winter clothing and took pride in how she looked. She started to realize that the printed word meant something and insisted on having a turn during the instructional periods. She started to copy the finger spelling and attempted to use it on her own. However, her parents did not attend the finger spelling classes, so she got little help at home.

Another child spent years in oral day classes. She was diagnosed as mentally retarded, then perceptually handicapped, next emotionally disturbed, then autistic and finally schizophrenic. When I first came into contact with her, she started to cry as soon as she reached the school door. She had no way of communicating and was extremely frustrated. She had developed bizarre habits and movements, such as wandering in circles swinging a twig or piece of string back and forth in front of herself. She would punish herself for mistakes she made by pinching or hitting herself, trying to tear her clothes or to twist her fingers. The day class teacher suggested that she be sent to the residential school. She was there one year and the school did not take her back. She was out of school for almost five months, and during this time the parents continued to try to get her into a class somewhere.

In January, I was asked if I'd take her into my class. I did so on the condition that I be allowed to use my own methods of instruction. This girl had never experienced a feeling of success with the oral method, so I dropped it and relied on writing, illustration, pantomime and gestures. I did a lot of perceptual training and pre-reading exercises. I used an ordinary simple coloring book as a workbook for coloring, simple reading sentences and eventually question work.

I soon learned that if I marked something wrong or corrected it with a red pencil, she was upset and punished herself. So I stopped that, but showed her the mistake, let her correct it and then checked it off. We had no self-punishment with this system. We had no crying and some of the bizarre movements let up. The other pupils congratulated her when she did good work and were rewarded with a smile.

One day I taught her the signs for several colors. The next day, she knew them so I gave her several more. The other pupils were quite excited about this, and although they knew they were not to use signs in an oral class, they encouraged her. Then I received a phone call from her mother who was somewhat upset. The child had found a color chart in a picture dictionary and was trying to show her parents the signs for the colors she knew. She was very excited and the parents could not understand what it was all about. This was one of the first indications of a carry-over from school to home. I explained to the mother what I had done and that I was pleased that she had called as I wondered if the child would use the signs in another situation. I asked the parents to get a deaf adult who would teach them and the child to finger spell and sign. At the time my one idea was to develop some means of communication between the parents and child. They were successful and went several evenings a week for instruction.

Once I knew that this pupil could retain some signs and their meanings, and had tried to use them meaningfully. I started using finger spelling. The deaf lady helped again by giving her and the parents more finger spelling practice. The child continued to make progress slowly, but I didn't want to go too fast as I was afraid of building up pressure and frustration again, and thus undoing any progress we'd made. At this time I left this school and the parents enrolled her in the residential school. She is still attending and is doing very nice sewing and knitting, and takes typing and key punch besides a number of other vocational subjects. She takes a great pride in her appearance and the teachers' reports all said that she was doing well.

This mother's story was a continual search for help. The child was in and out of various classes, with the mother trying to teach her at home during the periods when she was not in a school. Two different schools for handicapped children wanted the parents to put her in a school for the mentally retarded. But they wouldn't. They contacted me by phone and I used to suggest different types of work to try with her and told the mother about the Rochester Method. The mother obtained an alphabet card. She would take an object, finger spell its name, using the card, one letter at a time and have the child write it down. When the word was finished, it was matched with the object. The mother said that the little girl was very happy once she realized that she could finger spell.

The parents said that you don't realize how much tension builds up and you don't know its there. The mother talked about her own personal loneliness and isolation. She couldn't take the child out and socialize with her friends because the child was so frustrated that she was hyperactive and destructive. They could not get people to accept the child as she was when they met, but had to explain, and then they felt guilty. With the use of finger spelling the whole atmosphere at home changed. The child became one of the family and her school work improved, including language and reading.

Probably one of the newest handicap labels involves the learning disabilities' group. We get many deaf pupils being classified under this label, whether he has a true learning disability or not. This little girl is an only child. She was labelled mentally retarded by the clinic at ten months. The mother went back to work and the infant was left in the care of an older French woman. So from the first year of her life she was exposed to a spoken language during the working day that was different to the one used by the parents at home. When I first saw her she acted like a miniature grandmother. She was spotlessly dressed and never got her hands dirty. She had never played with another child in her short life.

By the time she was five years of age the parents were worrying about her education. The clinic still insisted that she was not deaf and wanted the parents to put her into an institution for the mentally retarded at the lowest level of functioning. However, the clinic speech therapist felt that this youngster was deaf, basing her judgment on her observations of the deaf pupils that she saw at the school. I was asked to give the child a trial period in my class. She could barely walk, and did not run, jump or hop. She was left-handed and kicked with her left foot, but used her right eye when looking through a tube. She seemed to have some paralysis on the right side. She was tongue-tied to the very tip of her tongue and had trouble eating. Her eyes shifted back and forth almost continuously, and she often looked sideways at an object or at her work. She was very small and immature for her age.

The mother co-operated in every way. She had the child's eyes tested and got glasses. She got a hearing aid and had ear moulds fitted. She had the youngster's tongue clipped, and we had to teach her to use it. There had been no response to speech or lip reading. The little girl used her own gestures. These were the most meaningful ones I have seen a small deaf child use. She was full of "talk" in her own way and could get most of her "stories" across to us. After six months of getting no place with the oral methods, I decided to try the signs for a few colors and some easy objects to see if she would remember them and could use them meaningfully. We were greatly pleased and encouraged when she caught-on and began to give them back. I explained to the parents what I was doing and why, and they had no objections. So I suggested to them that they get a deaf woman as a baby-sitter over the Easter break. It was amazing what the child learned in that short week. The parents became greatly interested and enthusiastic and learned some signs and how to finger spell themselves. They made friends with an adult deaf couple and a few years later had a deaf teenager come to live with them. The child learned a lot as they all "talked" to her at home. At school we worked from the signs she knew to finger spelling of the word and then to the printed form. Finally we attempted speech and lip reading. She became aware of the lip movements and tried hard to imitate, but she will never have much speech. Progress was slow but we could see advancement from year to year. She learned to print several simple sentences for news and could read them. In using the verb "to have", she never could remember whether it was the "s" or "ve" ending. She would print "I ha,,,," and come to us to ask if it was "s" or "ve", using finger spelling. She did the same when writing about a classmate. She also could read simple questions and answer them in one or two word sentences. Her handwork improved as she gained more control over the fine motor movements which the finger spelling helped to develop.

During the first two years in school, we spent a lot of time doing activities on a two and three year-level and learning how to interact with the other pupils. We had to make up for "five lost years" and the activities which even deaf children learn. This often applies to multiple-handicapped deaf children, but not to the extent it did in this case.

The parents were wonderful. They included her in all their activities and made sure that she knew before-hand where they were going, how they were going, what or whom they would see and what they would do. They used pictures, the printed word and finger spelling.

The following are excerpts from the mother's reply to my request as to how the use of finger spelling influenced their family life:

> At age five, Darlyne was a *very frustrated* girl. Starting school was a big step and her energy started to channel off in the right directions so we saw quite a difference fast. . . . She was a stable person in spite of all her problems so communication was the cause of most of her frustration. In with communication, out with frustration. Simple Basic Problem and really a Simple Basic Solution, although we have to say it wasn't an overnite success. It has taken years, but her sign and spelling vocabulary has grown up with her. The hardest part was starting the whole concept and of course giving up our own "homemade" signs that we'd developed over the years. This "homemade" business is inevitable if proper help, etc., is not available right from the beginning. I am more convinced now than ever about "Language by any means". . . . There has to be a bridge. Darlyne had a head full of very important things to explain and express and no means to do it. It's been pouring out ever since she's had a "means" and in fact this is not any different than any normal child's thinking-expressing development. Amazing how she was groping for "words" in her own way.
>
> I've *heard* all the arguments in favour of Oralism (complete, that is). I've discussed it with just about every deaf person I've met and they had all the best arguments, not against it but against being forced to communicate orally only. They know they need the "bridge" to be effective and they especially know how they suffered if they were forced into oral when young. Proof of this is how many profoundly deaf people have severe language-grammar problems. . . . In the end I've decided that the most exciting things in life are what goes on in our minds. It has to be dull to go through life thinking Black and White. Finger spelling is the paint brush. The only proof I need is Darlyne. With all her problems she still comes across in Living Colour.

STATUS REPORT ON MID-ATLANTIC (NORTH) AND CARIBBEAN REGIONAL DEAF-BLIND CENTER

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In May, 1973, the Mid-Atlantic (North) and Caribbean Regional Deaf-Blind Center, serving New York, New Jersey, Pennsylvania, Delaware, Puerto Rico and the Virgin Islands received its fifth grant award under Title VI–C, Sec. 622, PL 92–230. The grant award was approved by the Bureau of Education for the Handicapped, U.S. Office of Education, Department of Health, Education, and Welfare to assist the Regional Deaf-Blind Center in providing direct services through its participating agencies for deaf-blind children and their families.

A total of 15 project proposals were approved for the following purposes:

1. Identification and referral for evaluation and placement of deaf-blind children in appropriate programs.
2. Continuation and expansion of direct educational and training services for an additional number of deaf-blind children.
3. The planning, development and implementation of new projects to serve additional children.
4. Continue to provide training, educational and recreational services through the summer months.
5. Provide parent counseling.
6. Provide diagnostic-evaluative and consultative services (Medical).
7. Provide educational evaluations through the Regional Diagnostic-Evaluative Services Program at NYIEB (initiated in September, 1972).
8. Dissemination of information.

These objectives are in accord with the general goals established by the Bureau of Education for the Handicapped, U.S. Office of Education, Department of HEW.

Following is a list of agencies that received Title VI–C monies to provide direct services to deaf-blind youngsters and their families during fiscal 1972–73. It also shows the additional number of children served during 1972–73:

Agency	1971–72	1972–73
New York:		
1. NYIEB:		
(10-month school year)	69	75
(Summer program)	16	17
2. Jewish Guild (summer program)	0	11
3. IHB (summer program)	0	7
4. NYUMC–RBDEP:		
(11-month school year)	15	21
(Medical evaluations)	100	100
5. Willowbrook State School	0	6
New Jersey:		
1. New Jersey Commission f/t Blind:		
(10-month school year)	21	21
(Summer program)	20	20
2. Deron School for the Hearing Handicapped (10-month school year)	0	4
Pennsylvania:		
1. Overbrook (10-month school year)	24	28
2. WPSB (10-month school year)	0	9
Puerto Rico:		
1. University of Puerto Rico (10-month school year)	0	10
Virgin Islands:		
1. Department of Special Education	0	(1)
Regional diagnostic services program at NYIEB	0	50
Total	265	379

[1] Identification, screening and project planning.

The above figures show that during 1972–73, an additional 114 deaf-blind children received services. Of the total (357), 150 received D&E

services at NYUMC (100) and the Regional D&E Services (50) located at NYIEB.

Following are some of the highlights of fiscal 1972–73:

1. Development of the Regional Diagnostic Services Program at NYIEB: One of the important achievements of the regional service expansion is the development of a Regional D&E Services Program at NYIEB. Two Diagnostic Teachers and a Psychiatric Social Worker were employed for this purpose. The Diagnostic Teachers evaluated approximately 50 children from the states of New York, New Jersey and Pennsylvania. The length of the evaluation ranged from one to four days, based on the "quality and quantity" of services received by the individual child. The purpose of this evaluation is to determine the functioning level of the deaf-blind child, the educational and/or training potential and the types of activities needed to be included in designing a program for such a child. The evaluation findings and recommendations have been extremely helpful to personnel and to agencies servicing these children. Parent Counseling, which is a part of the total evaluation service, has also made positive contributions in assisting the parents to understand better the problems and needs of their handicapped child.

2. Deaf-Blind Project at Willowbrook State School for the Retarded, Staten Island, New York: In September 1972, a pilot project was initiated at Willowbrook State School for six deaf-blind children between the ages of 6 and 9. Willowbrook has a deaf-blind population of approximately 40. These six children have been in residence at Willowbrook for a period ranging from 2 to 4 years. The children were functioning at a very low level in the areas of feeding, dressing, toileting, sound awareness, communication, etc. The results of the pilot project were very encouraging. The children made significant gains and, as a result, NYIEB has planned to accept two of the six children in their M–H program in 1973. It is, therefore, obvious that the intensive programming at Willowbrook has made some impact in the lives of six children, especially for the two who made sufficient gains to be transferred to the residential program at NYIEB for deaf-blind multi-handicapped.

3. The Deaf-Blind Population in the Region: During the months of July and August, 1972, a survey by mail, followed by telephone calls and personal visits, of 134 state, local, private/public agencies serving the mentally retarded in the Center Region was made to locate deaf-blind children. A total of 225 children were reported to be deaf-blind by 50 agencies for the retarded. This gave us a grand total of 722 children in the Region, as opposed to 337 identified a year ago. The majority of children in institutions for the retarded are not in formal programs, geared to meet the needs of children with visual and auditory impairment. This is primarily due to lack of personnel and/or lack of funds and/or lack of expertise in the areas of deaf-blind. It will be, however, possible during the fiscal 1973–74 that approximately 30–35 of these institutionalized children will be placed in pilot projects to be initiated in the agencies of their residence. It will not be out of place, at this time, to mention the funding pattern for deaf-blind services since the establishment of the Regional Deaf-Blind Centers across the country.

4. Funding for Deaf-Blind Services: Title VI–C funding for deaf-blind services has been very encouraging in the past four years. The increased funding from year to year nationally has helped all ten Regional Deaf-Blind Centers in initiating new programs and expanding existing programs to serve an additional number of deaf-blind children.

In 1973–74, we hope to initiate five new projects for deaf-blind children across the Region. Of these, four projects will be in state institutions for the retarded. Fifth project will be in the Virgin Islands for approximately six deaf-blind youngsters on a day basis. In addition, the programs at NYIEB, Overbrook and the University of Puerto Rico will be expanded to serve more deaf-blind children. It is estimated that approximately 60–65 additional deaf-blind children will receive direct services in programs designed to meet their needs. Further, approximately 85 children will be in summer programs throughout the Region. In line with the established goals of the BEH, the Regional Center will make every effort to provide direct services to 75% of the deaf-blind population by 1977.

ME, MYSELF AND WHO? OR HOW THE DEAF CHILD LOOKS AT HIMSELF

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Who am I? What am I? Me, Myself and Who? The deaf child frequently encounters these questions while he tries to sort out for himself who he really is, what he wants and where he is going in life.

The child with normal hearing develops his concept of self from his contacts with people, how they treat him, what they say to and about him, and what place he holds in his family or peer group. The most significant people in the young child's life, initially, are members of his family and, thus, theirs is the dominant influence on his developing self-image. As he grows older and as his contacts with peers, teachers, and other adults become more significant in his life, their influence becomes greater and more meaningful.

The child's concept of himself as a person is a combination of his thoughts and feelings about himself. This self-image or concept includes physical and psychological self-images or concepts. Generally the physical self-images are established first and include or relate to the child's general appearance—whether he is attractive or unattractive, sex appropriateness, the importance of the different parts of his body to his behavior and the status they may give him in the eyes of others. The psychological self-images are based upon the child's thoughts, feelings and emotions. They are made up of the abilities and qualities which affect his adjustment to life: honesty, independence, self-confidence, courage, and aspirations for the future.

The young child may have difficulty co-ordinating his physical and psychological self-images and the result may be that he considers himself a "dual personality". Maturity enables him to perceive himself as a unified individual.

The hierarchy of self concepts is illustrated below:

SECONDARY SELF CONCEPT

Based on experiences outside of home;
Relate to how child sees himself through
the eyes of others.

PRIMARY SELF CONCEPT

Based on experiences child has in home;
Made up of individual concepts resulting from
experiences with different members of family
group. Physical and psychological self images.

What happens to the deaf child as he goes through the process which has been described? It is obvious that the deaf child and his mother do not establish the same "verbal rapport" which is set up between the young hearing child and his parents, especially his mother, during the early stages of his development. One must then ask how limited communication between the mother and her deaf baby alters the nature of the child's relationship to his mother and to the other people who are important in the child's life.

The deaf child may become alienated from his parents or other hearing people because of his lack of or limited social development, extreme difficulty in communication, or unusual vocal sounds. Many parents are so overwhelmed by these factors that they simply withdraw from the child, leaving him more isolated and confused about himself than ever. He is thus deprived of the opportunity to become involved in meaningful family relationships which are critical to the development of the primary self concept. The deaf child who is allowed to utilize a reliable, visible communication system early in life has generally had many more opportunities to explore and develop his social relationships, thus reducing the isolation or withdrawal mentioned previously.

Early learning experiences for the hearing child are characterized by a variety of "ground rules" which are set up by his parents: "no," "don't touch," "hot," and "good girl". These concepts are usually learned readily through the tone of voice in which they are delivered. The same concepts are frequently imported to the deaf child through punitive or physical punishment since the parents do not have adequate communicative skills to get the message to the child. The deaf child, therefore, frequently receives negative re-enforcement and becomes anxious and tense in social situations.

Frequently parents of deaf children feel inadequate in developing appropriate means for establishing acceptable social behavior and rebel against the need to lay out limits through punishment. The deaf child may then be overindulged or allowed much greater latitude in behavior than his siblings. The effect of this attitude by parents does nothing to enhance the child's concept of himself since he realizes that his parent's treatment of him is different and siblings may express their resentment of what they consider unfair treatment.

Children learn the appropriate behavior for their sex by identifying with their parents and by the training and pressures which parents exert in this direction. Later they learn by identifying with peers and adults outside of the home. The average deaf child of hearing parents has only limited access to information from his parents on adult roles and, therefore, is much more dependent upon peer and adult contacts after he enters school.

The physical absence from the home of the father or the lack of involvement by the father in the training of the child has great influence on the developing personalities of boys. Boys who receive most of their training by their mothers, or in the case of deaf boys by female houseparents or counselors, tend to be less masculine and less aggressive, are more prone to show feminine sex-role preferences, and are more likely to engage in noncompetitive play activities than boys who have male models to imitate. These youngsters may indulge in "antisocial" behavior later in life when they try to develop more masculine tendencies.

Parents have frequently mentioned their dismay or dissatisfaction at the influence being exerted by peers upon their youngster while he is in school but fail to realize or realize too late their own inability to impart the types of information their child is seeking. The implications for early and continued counseling of parents of deaf children are clear. Most parents are responsive and receptive to professional efforts which are made in this direction.

How the deaf child is treated in social situations is critical to his developing self-image. Is he allowed and encouraged to participate in social activities with his peers? Are explanations and demonstrations of appropriate social behavior given by his parents? Too frequently the deaf child is left "on the sidelines" with no explanation from the adults or peers concerned. He must provide his own analysis of the situation and that may be inadequate or inappropriate. He often gets no feed-back unless his actions are inappropriate, which only serves to re-enforce the negative aspects of his behavior rather than provide him with the right "tools" for the next experience of this nature. The deaf child must have repeated successful social experiences to develop a positive concept of himself in this area.

Verbal input, both directly and indirectly, has a great influence on the developing self-image of the hearing child. The parents may spend a large amount of time talking with the child about a variety of things: his behavior; whether it was "good" or "bad"; what aspirations they, as parents, have for the child; helping him develop aspirations and plans for his future; providing him with information and plans for family activities and concerns. This child also receives a great deal of information indirectly when he or his activities are discussed by his parents. This "instant feed-back" helps him in developing a concept of himself as a person. If he constantly hears that he is a "bad boy", he soon begins to think of himself in that light and behaves accordingly. Comparisons by parents of a child with siblings or peers may enhance or destroy the positive self-image which is being developed.

The deaf child of hearing parents generally receives little or no information from his parents through verbal means, especially in the early years. He is, however, discussed at length in family gatherings and by professionals with very little information given him about the results of the discussions. One high school senior reported that she had visited so many doctors' offices that she felt her parents were trying to sell her for a medical specimen. It was twelve years before she was told, in writing, by a physician that he was attempting to define the cause of her deafness for her parents. This young woman recounted the sleepless nights she had spent wondering about the endless discussions her parents had, the money that was spent on the frequent trips her family took to various clinics, and the distressed looks on the faces of her beloved family. She felt that she was the cause of this concern and required extensive psychotherapy to repair her badly damaged self-image. Her comment was, "Mother and Dad never told me anything except that it was time to eat or go to bed."

A positive approach toward building an adequate self-image in the deaf child involves the following steps: first, acceptance of the child by his parents and family with the recognition that this child has feelings, capacities, and aspirations of his own with the same basic desire to try out his inherent capabilities as his hearing peers; second, the early recognition by the deaf child's family and the professionals involved in educational planning of the need for a reliable, visible communication system which will provide free two-way communication of ideas and concepts between the child and his family rather than restricting him to a limited, stilted vocabulary which is solely dependent upon oral skills. Delaying the child's ability to control his environment until oral skills are functional may cause serious retardation in other areas of social development. Third, the deaf child needs adequate opportunities to develop interests and social capabilities with emphasis being given to his role as an adult. Fourth, it is the right of a deaf child to be DEAF and to live a full, adequate and satisfying life with the disability which deafness imposes. The individual whose whole childhood has been spent in a denial of deafness through inappropriate educational placement has, indeed, a difficult task to know who he is and where he is going.

In conclusion, the deaf child who faces the adult world with an "I CAN" feeling and an adequate supply of positive, meaningful experiences, a loving, concerned family and the freedom to grow within his own capabilities is on the way to a happy life, secure in the knowledge that he does, indeed, know who he is.

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PRE-VOCATIONAL AND VOCATIONAL, (JOB ORIENTED), PROGRAMS IN SCHOOLS FOR THE DEAF

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When I was asked to present this paper on Pre-Vocational and Vocational, (Job Oriented), Programs in Schools for the Deaf, I thought that it would be rather easy to find enough issues with significance to devote 30 or 40 minutes of the time before this group. However, I immediately ran into trouble with the term Pre-Vocational. It seems that even though the term is widely used in deaf education it is almost impossible to find the term in literature dealing with vocational education in regular public schools. After a little digging, I came across the following definition for prevocational training in a booklet titled "Trends in Prevocational Education For The Deaf" which is the published report of a Workshop for Improving Instruction for the Deaf held at Ball State University, Muncie, Indiana, in 1966.

"Prevocational training is concerned with the care of, as well as use of, common tools employed in industry; with the development of understanding for and interest in industry/commerical and home/consumer management areas; with observance of general safety precautions involving the use of materials, tools and machines in their appropriate training settings; and with the development of desirable work attitudes, habits, and traits."

Those of you here who did your undergraduate work in Industrial Arts as I did, know that this is a definition of Industrial Arts.

This indicates to me that what is commonly called prevocational education in schools for the deaf is in fact Industrial Arts and Homemaking. I personally prefer the term Exploratory which we use at The Pennsylvania School for the Deaf, but regardless of what you call it prevocational education is not vocational education, although it can and should be a necessary component of vocational education. Nor is it occupational training or occupational information beginning at the Jr. High level. Nor is it relative only to those children and youth who will NOT go to college, and finally, it should not be separate from, or unrelated to general or academic education.

What, then, is the relationship between prevocational education, vocational education and academic education? I offer to you that all education from the earliest years to the time the individual enters skill training for a trade at the high school or post-secondary level or academic and professional education leading to a bachelor's or advanced degree is prevocational education. Preparation for successful working careers should be an objective of all education, with each teacher in every course emphasizing the contribution that subject matter can make to a successful career whether it be in engineering, accounting or as a skilled auto mechanic or electrician.

Unfortunately, many schools for the deaf believe that prevocational education can do the job of a good vocational program. True, they have realized there is a need for vocational education and have made what can be best described as an attempt to provide it by utilizing their existing Industrial Arts shops and Homemaking laboratories. Their reasoning is that an academic program with additional time in the shops, provides their non-collegebound students with a background which gives them a freedom of choice and possibilities for social and economic mobility. For some hard of hearing youth this is undoubtedly the case. But for most deaf youth the choices could not be more limited than they are today. The deaf school graduates with no special skills, not only have very few job opportunities to choose from, but low paying ones without a future, as well. Typically, they get jobs which are at entry level, requiring few skills. Many of the jobs are in food service, dry cleaning establishments and service stations.

The luxury of not facing the issue of making a living until after leaving school is one few deaf students can afford. Unfortunately, Detroit does not manufacture automobiles that can be repaired by untrained deaf workers.

The basic idea of prevocational education in our schools should be to renew and revitalize all of education, based on motivating our students, through career awareness, orientation and exploration in a laboratory atmosphere. It is important to remember that when we talk about "exploration" in our shops, some of those exploratory experiences may find many applications other than vocational. Our prevocational programs should be developing knowledge of basic industrial materials and processes. Attention should be directed toward establishing a foundation for proper attitudes toward work and developing a knowledge about industry and consumer goods. The career development and vocational guidance which goes on in a Prevocational Program are particularly important. A good Prevocational Program enables the student to explore job opportunities in which he may be interested through exploration of skills; exploration of opportunities; assessment of interest and ability; and attitude development as it pertains to employability.

But curriculum materials in any area can be exploratory only for a limited time, then exploration must be replaced by study of increased depth: Vocational Education. Any school that stops with prevocational training is leaving their graduates on industry's doorstep, half trained, hoping that BVR or industry will finish the job for them.

Unfortunately, even for the graduates of regular vocational schools this is not done, let alone untrained deaf graduates. A recent survey of the printing industry indicated that this industry provided on-the-job training on a very limited scale, and this only out of sheer necessity. The managers in the printing industry feel they cannot afford formal training programs, as an integral part of their over-all operations. They stated it is too expensive in terms of training staff, man-hours, and in terms of loss of quality in product. These men say that when a department manager is looking for a new man for expansion or replacement, he needs that man at that point in time—not six months after hiring and training. Nor, they say, can they afford, at that point, to take a productive employee and turn him into a teacher. So I am afraid we will have to do the job ourselves.

The solution is simple; provide a Job Oriented vocational program for your students, not excuses or programs that are vocational in name only.

The future looks bright for vocational education; by 1980, the number of annual job openings in mechanical trades, construction, health occupations, and other skills taught in vocational programs is expected to be nearly four times greater than the number of people who completed such programs in 1968. Statistics of the U.S. Office of Education indicate a tremendous growth in enrollment in vocational programs at the secondary level by 1976. At that time, 41.1 percent of students will be in vocational programs, compared with 24.3 percent in 1971. This is an increase of nearly two million students. Because of these spectacular vocational education statistics, we in vocational education for the deaf must provide a quality program if our graduates are to successfully compete in the labor market.

Many problems need to be corrected if we are going to meet this challenge. First of all, we need more action and activities and less talk about how vocational education is different from other areas of education, expensive, and so on.

The first objective of a vocational program is to prepare persons for employment. The teacher's prime responsibility is to provide realistic training that equips a student either to get a job or to move into more advanced training. Putting it another way, in vocational education the product is the student, and we are concerned with his performance in society. At P.S.D. the vocational department has a saying which goes "A Qualified Graduate Is Our Best Product." Our success is measured in terms of whether or not our graduates have a job after graduation. Each year at P.S.D. we conduct a follow-up study because we welcome the current trend of accountability in education. Our vocational education program has measurable objectives that will show results, so we capitalize on them.

I wonder how many schools for the deaf—should they do the same—would discover that their vocational programs are so poor as to leave students unacceptable to business and industry. For those schools where this is true, new programs of vocational education should be added which are job oriented, which will lead to employment in jobs known to exist, and which can be successful educational experiences for youth who cannot profit from instruction in traditional programs. Only when deaf education becomes concerned with the placement of its product will schools know whether their vocational programs have been a success. And ladies and gentlemen whether we like it or not, because society is questioning and demanding an accountability evaluation of all tax-supported efforts, our vocational programs will be divided, in the near future, into those that are effectively achieving the objectives of job placement and those which are not.

I, now, would like to turn to the matter of Job Oriented Vocational Education, the job competencies you can provide your deaf graduates through vocational education and how to go about it. In reality, very few schools can provide full job competency, but if our programs are quality vocational programs we can provide job-entry competency. This concept makes sense in terms of what most schools for the deaf are equipped to do, of what industry and business expect, of what labor through the organized trade unions can accept, and what our students would be able to do. We must not forget that job-entry competency covers a multitude of areas, from operating a dishwasher, changing a flat tire and to operating a two-color offset printing press. I realize that all of our deaf graduates will have to learn something on the job, but first they need the skills necessary to get that job. If the vocational program at a school is not providing its students with job-entry competency—at all levels—commensurate with capabilities, interests, and motivation of each student, the program is vocational in name only. In vocational education, there is no situation that resembles a job more than the job itself. Therefore all work performed in the vocational department should be live work when ever possible. Even an overpaid ditch digger would be reluctant to dig a hole in the ground, endlessly, without a meaningful purpose. Our students are the same as all of us, we have a selfish need for a sense of accomplishment in addition to the material rewards of our job.

In job oriented vocational education it is also important to clearly establish in the student's mind an understanding of rules. When an overly sympathetic teacher declines to condition a student to learn by a set of rules he will have to live with on the job, that teacher is not preparing him for the day when he is on a real job.

You must also require your students to perform to the exacting standards of business and industry. If you accept marginal work from a student you will most certainly reinforce his suspicion that he can get by in the world with marginal performance. The typist who believes that misspelled words are okay will not be successful on the job. An auto mechanic who properly diagnoses only half the ills of an engine might make a dollar for a dealer today, but he won't endear himself to you the car owner.

In job oriented vocational education the only diploma is a job, not class rings, the year book, or class trip; just the very serious business of facing up to reality which more likely than not, means a good paying job.

GALLAUDET COLLEGE, THE GRADUATE SCHOOL—PRESENT AND PROSPECTS

Gilbert L. Delgado, Ph. D., Dean

The major commitment of the Graduate School is to its students. Its orientation is one of service. Its philosophy is that through the preparation of skilled, sensitive professionals, it will contribute to better opportunity and quality of life for deaf children and deaf people.

The training programs are dedicated to quality. They can meet the present and future requirements of professional accrediting bodies such as The Council on Education of the Deaf, National Advisory Council on Teacher Education, and American Speech and Hearing Association.

Follow-up evaluation of our graduates indicates high level performance which is the result of comprehensive training. As we begin to meet the previous shortages of professionally trained persons, the quality of the training will become increasingly more apparent and significant.

PRESENT PROGRAMS

The present graduate programs consist of the following:

1. Teacher Preparation. A Master's degree, two-year program which is quite extensive, providing in-depth preparation in fundamental areas, courses teaching innovative approaches to learning, and over 600 hours of observation and practicum. Practicum is at various levels. Observations and field trips cover regular school programs, programs for the deaf, and a wide variety of agencies and programs for deaf adults. Supervised practice teaching occurs at residential as well as day programs. Students can concentrate on preschool, elementary, and secondary levels.

2. Our program in Audiology now prepares clinicians for ASHA competency certification. It also is a two-year program. This school year the training program will become certified by ASHA. We have recently added to the faculty two professors, one with a great deal of background in aural rehabilitation, the second with background in speech pathology and education of the deaf. Thus, the program will provide the student with options, viz., clinical, aural rehabilitation, or school audiology.

3. Our counseling program is experientially oriented. It will prepare counselors to deal with the needs of deaf children and deaf students, relate to parents, school personnel, vocational rehabilitation counselors, and employers. Practicum for this program will take place in the area's schools, rehabilitation centers, etc. The rich resources of the Washington area provide students with varied experiences and direct input from leaders of organizations of the deaf, federal agencies, and the like.

Though the program is only one year old, we have had many, many applicants. The number of applicants, coupled with two years of experience as a prerequisite, should assure future employers of competence.

We have generally placed all of our students by not later than the end of June. Our Placement Service on campus now prepares a complete placement file on each student.

FUTURE DEVELOPMENTS

The Graduate School conducted a survey-type assessment of needs last year. Four hundred seventy-eight agencies, schools, organizations, clinics, etc., were contacted, with over 65% return. The basic questions asked were: (1) What kinds of professionals do we need to work with deaf people? (We asked the respondent to rank according to need.), and (2) Which areas do you feel Gallaudet can best undertake?

The results, by priority, were as follows:

1. Teachers of the multiply-handicapped deaf
2. Administration and Supervision
3. Psychology (school/clinical)
4. Audiology (school/rehabilitation)
5. Vocational Rehabilitation Counseling

By the 1974–75 school year, we plan to have a program to train teachers of the multiply-handicapped.

The same year we hope to accept students for a doctoral level program with foci on administration and educational research. This program will be affiliated with a Consortium university. Plans are to develop this program with an in-depth concentration on deafness with extensive practicum and internship activities built into the program. In short, approximately two-thirds of the work will be done on our campus and one-third at the affiliated university or universities. The degree will come from Gallaudet. We feel there is a need for senior-level training for administrators and researchers—and we are not limiting the areas of professional growth to deaf education only, but rather allowing for our graduates to impact on all special and regular education.

Our audiology program will begin to direct clinicians into school and rehabilitation outlets as well as clinics this coming school year.

We have prepared a pre-proposal for a Master's program for vocational rehabilitation counselors. Depending on funding trends in HEW, the program ostensibly could begin during 1974–75.

Using our Psychology and Counseling departments as a base, we hope to develop flexible affiliated programs with Washington universities to train educational and clinical psychologists at both the Master's and Doctoral levels.

Plans are now underway to offer much broader extension, evening, and summer programs. This summer, along with the more regular course work offered, we also have an institute on behavior modification and one on manual communication in its broadest sense.

A director who will coordinate this expansion will arrange instructional programs based on specific expressed needs. These programs will address themselves to local, regional, or national requests on a pay-as-you-go basis.

The projected enrollment of degree students by 1980 is anticipated at 250–300.

Research

Gallaudet College has needed a major thrust in the area of research. Its resources are excellent; present research projects are significant but perhaps not as visible as they should be. There is a need to take inventory on research in deafness. We need to identify and follow up research which has made a difference in the lives of deaf children. We need to build the skills necessary to translate research findings in a meaningful way, so the practitioner can *do* something with these data.

There has long been a need for establishing priorities. Gallaudet hopes to be an important mechanism in mounting such a thrust. By interacting with the field, by interfacing with other projects, by serving as a coordinating and clearinghouse facility, it can make a major contribution.

On June 1 of this year, Dr. Clarence Williams became the Associate Dean for Research. Dr. Williams, a former professor of education and psychology at the University of Rochester, has written and published extensively. He is best known, recently, for his work in Visual Literacy. His primary research interests at present are perception and learning.

Consortium

In the spring of 1971, the Consortium of Universities in the Washington, D.C. area invited the four-year accredited colleges to join as Associate Members. Gallaudet saw this as a tremendous opportunity for its students, and, after unanimous approval by the Board, registered its first students that summer.

The member institutions are Georgetown, George Washington, Catholic, Howard, American, Trinity, D.C. Teachers, and Gallaudet. Together, well over 6000 courses are made available to their students through cross-registration. You can see the tremendous possibilities, the outreach for our students.

The Consortium has joint commitees on : libraries, purchasing, transportation, student aid, registration, admissions, computers, affirmative action, and, of course, merged departments of instruction.

We have had about 25 Gallaudet students enrolled. About five students from other institutions have taken courses at Gallaudet. We provide interpreting, notetaking, and tutoring services as necessary.

The Graduate School will need strong internal and external support to accomplish these goals. It has and will continue to involve the field in these efforts. It welcomes your suggestions.

LANGUAGE ACQUISITION THROUGH TOTAL COMMUNICATION

David M. Denton, superintendent, Maryland School for the Deaf, Frederick

First of all, let me say that I am very pleased that the Convention of American Instructors of the Deaf has provided time on the formal program for a discussion of the concept of Total Communication. The timing is good, in that, there is widespread confusion and misunderstanding as to the real meaning of Total Communication. This Section provides an excellent opportunity for us to explore the philosophy of Total Communication and to attempt to clarify whatever misunderstandings now exist. My remarks will be somewhat brief and are intended to accomplish two purposes. First, it is my sincere hope and intention that the confusion and misunderstanding, already mentioned, can at least be reduced and that a clear understanding and appreciation of this existing new concept will be possible for more people. Secondly, it is my intention to provide you with a brief, simple, but adequate rationale for the concept.

My remarks will be followed by a 12-minute color film on Total Communication which tells its own story and certainly helps dramatize this concept. I would mention, at this point, that the sequences in this film were completely unrehearsed . . . children, teachers, parents were filmed simply in the act of being themselves. The film will be followed by a video tape presentation by Dr. Alfred White. The video tapes themselves, and other materials that Dr. White will use, concern themselves with the quantity and quality of linguistic responses of very young deaf children using Total Communication. The next part of the program will be handled by Mr. Kenneth Brasel who will be discussing comparative data, showing the benefits of a sensitive, responsive language environment. The final presentation will be made by Dr. Leo Dicker who will be discussing Total Communication for teachers in training at the university level. Time is a problem, but it is certainly our hope that there will be time left after the formal presentations for questions and answers, comments and responses.

Now to get back to the task at hand—that of attempting to clarify a misunderstanding. The first area of confusion and misunderstanding centers around the mistaken assumption that Total Communication is a method. From a purely educational point of view, it should more logically be regarded as an oral, manual, auditory system, rather than a method. Methods, by their very nature, tend to be narrow and restrictive. An educational system, on the other hand, is based upon and involves a number of methods. From a still broader and more basic point of view, Total Communication is a philosophy—a way of thinking and feeling about deafness and deaf people. It is based upon an unconditional faith in the abilities of deaf people. It is based upon a recognition that the Language of Signs is the cultural language of most deaf people. It rests upon the premise that language grows out of human encounter—it is based upon the understanding that the linguistic process is common to all people, deaf or hearing, and that any child can and will develop a functional language capability if provided two things—an opportunity to interact with others and a stable symbol system that he can learn to manipulate for himself. For the child born with severe to profound hearing impairment, such a symbol system must be highly visual in nature. Total Communication is based upon the recognition that ideas and concepts precede words in the linguistic experience of the individual and that these basic ideas or concepts can more readily be woven into the fabric of the child's language experience when the symbols used tend to illustrate or describe the concepts they represent. These concept based symbols for the deaf child are signs.

These signs then become the initial tools for linguistic interaction between the child and his parents. Further, Total Communication recognizes and respects the natural sequence in the levels of linguistic development common to all people and holds that this process can neither be postponed nor its natural sequence arbitrarily interrupted or altered without serious consequences. Total Communication holds that language is a product of dialogue rather than instruction—that children acquire linguistic competence through free, uninhibited, unrestricted, linguistic interchange with others and not by being taught in a formal manner. Traditional attempts, by educators, to superimpose formal language systems upon young deaf children—children who are without linguistic experience which is gained only through communication, interaction, dialogue, have failed miserably. Total Communication then is based upon the belief that language is the natural outgrowth of interaction rather than the end product of instruction. Total Communication recognizes that the time for optimum linguistic growth and development is during infancy and the preschool period and logically that the home, the family, assumes initial responsibility for the child's linguistic development. In keeping with this, Total Communication recognizes that the mother is the best language facilitator and that the child should enter school with a functional language capability. This belief, in no way, relieves the school of its responsibility; it does, however, very dramatically change the nature of the school's responsibility.

In regard to the day to day practical aspects of Total Communication, the concept simply means that, insofar as possible, those persons within the child's immediate environment should talk and sign simultaneously and the child should be benefiting from appropriate amplification. This, of course, is based upon the belief that it is indeed possible to *sign what one says* with respect to English syntax, and that signs and speech and, indeed, the much outworn term "English" can be compatible. The consistent use of simultaneous speech and signing and the consistent use of appropriate amplification provides the child with a syntatical model for imitation, both visually and auditorily. The highly visual and dramatic Language of Signs operate as the foundation of Total Communication reinforcing, undergirding and clarifying those minimal clues available through speechreading. Likewise, minimal auditory clues are enhanced and reinforced by signs and speechreading. For all of us then, communication is total or multidimensional—one dimension enhancing, reinforcing and enriching the other. Lest someone be concerned that the deaf person not be able to attend to all the components of Total Communication, at the same time, let me hasten to remind them that, even though human communication is total—even though human communication is multidimensional, it has, at the same time, *a singular quality.* You know, people communicate, not mouths or ears! I fail to see, ladies and gentlemen, the rationale for the elimination of any of the three major dimensions of Total Communication—the oral, the manual or the auditory. Would anyone ask that the use of audition be eliminated from communication with young deaf children? Would anyone ask that speech and speechreading be eliminated from communication with young deaf children? Would anyone ask that the use of the Language of Signs be eliminated from communication with young deaf children? If anyone would answer yes to any of the three questions, the professional obligation for providing an acceptable rationale rests with them and not with me.

IMPLEMENTING A PHILOSOPHY OF TOTAL COMMUNICATION IN TEACHER PREPARATION PROGRAMS

Leo Dicker, Ed. D. director, Program for the Education of the Deaf,
University of Wisconsin, Milwaukee

I have been asked to discuss the involvement of University Teacher Preparation Programs in the process of helping to meet the need for classroom teachers who will exemplify the tenets of a philosophy of total communication.

It seems to me that in discussing this subject, the first step is to identify the kind of internal programmatic provisions that need to be established, so that what you say is also what you do. The old expression "Do as I say, not as I do" does not work with college students. It is very difficult to ask college students to accept a philosophy of total communication if you don't demonstrate to them that you yourself believe and carry out your professional responsibilities in a manner consistent with such a philosophy.

The following factors are not all-conclusive but I think they represent the major areas that the students are certainly aware of:

1. There is an instructor on the faculty who is deaf;
2. Faculty members are proficient in the use of all modes of communication and, if not, faculty are at least attempting to develop skills;

3. Faculty members seek out and use the adult deaf population in the community;
4. Coursework emphasizes the development of skills for teaching and the use of all modes of communication;
5. Faculty members are consistent in terms of what they say to the University students and what they say to other professionals in the field; and
6. Faculty members outside of the Deaf Education Program are in agreement with the Program philosophy and recognize its relevance.

Of course, successfully incorporating into a Program the elements I have just listed is not an easy task. I would be happy to share with you during the question and answer period some of the frustrations that have plagued me and some that continue to haunt me in striving to attain internal consistency. However, aside from the need for internal consistency, several other factors are important in developing teachers who will be able to effectively implement a philosophy of total communication with a classroom. Let me identify and briefly comment on some of the provisions that I feel are important within teacher preparation programs:

1. *Deaf students are enrolled in the Program.*—The interaction of normally hearing students with deaf students sensitizes both hearing and deaf students to the problems encountered in achieving effective communication. The hearing student also begins to perceive the problems that are faced by deaf people in their everyday circumstances. Hearing and deaf students begin to know each other as persons and not labels.

2. *Students spend time with deaf adults.*—Meeting a deaf person on his "turf", the local silent club, I have been told by former students has been the single most important experience they received in training. In addition, bringing deaf adults to the University to present their views about Education of the Deaf on the basis of their personal experience gives students an opportunity to gain insight into the issues surrounding the education of deaf children.

3. *Students teach in oral as well as total communication settings.*—Placing students in different school settings provides them with experiences which enable them to form their own opinions in an "oral" setting. My hope in doing this is that students will begin to form a basis upon which to identify those students who do and those who do not belong in an oral setting. I feel that an important goal for a teacher preparation program is to provide students with enough background, experience and insight into themselves and their own feelings, that they can, as teachers, *be objective* in terms of making recommendations about placement of deaf students within school programs. This will help to insure that the individual needs of deaf children will be met.

4. *Instill professional flexibility.*—This factor is somewhat related to what I have just talked about, but which I feel needs to be emphasized. There has been much discussion recently between proponents of Ameslan, American Sign Language, Seeing Essential English, Signing Exact English, Signed English, Linguistics of Visual English and Manual English. What frightens me is that we may become locked into the same pattern that we have accused oralists of doing; that is, that we begin to support one mode of manual communication to the exclu-

sion of all other modes. Unfortunately, this is done more on an emotional basis than on an objective basis. I believe that teacher preparation programs must be flexible. Programs have a responsibility to expose students to all the new developments in sign language, until such time as objective evidence is obtained which indicates a superiority of one form of communication over another. Incidentally, this concept of flexibility should be extended to all areas of deaf education.

5. *Development of Communication Skills.*—I would like to share with you what my supervising teacher told me during one of our first conferences during my first year of teaching. She said, "you know the first year we will lose a lot of money on you. During the second year we may 'break even'. It will not be until the third year that we begin to show a profit." What my supervising teacher meant was that I would not be too effective as a teacher until I had two or three years of experience. I think she was right.

Though we constantly strive to improve teacher preparation, there is no substitute for long term experience. In developing communication skills the same principle applies. We do not "turn out" finished products. Our aim is to develop basic skills in communication upon which refined skills can be developed with more experience.

It is important to stress that the ability to work with deaf students to develop "oral" skills is also a vital part of a communication skills program. There are some major differences, however, in the way this is approached. An attempt is made to teach students how to integrate the teaching of speech with the supplement of manual communication. Speech work is not emphasized until language skills are present. The model of speech and speech-reading as skills to be used to develop language has been scrapped. Students training to become teachers of the deaf are taught to work as diagnosticians with respect to communication. The amount of time spent in the development of oral skills is related to the individual student's ability to progress along a hierarchy of skills.

Thus, the goal in preparing teachers of the deaf is to provide them with the tools they will need to develop communication skills in deaf students, while at the same time developing recognition of the fact that not all deaf students will be successful in all modes of communication.

LEARNING DISABILITIES: A DEVELOPMENTALLY-BASED DIAGNOSTIC-REMEDIAL APPROACH

George H. Early, Ph. D., associate professor, Indiana State University, Terre Haute

Introduction

I make no claim at all that I have any expertise on the deaf. My field is learning disabilities. Within the field of learning disabilities, one of the major special interests is in certain low-level functional deficits which seem quite common in learning-disabled children. Among those low-level deficits which plague many of these children are certain problems of reflex, motor, and perceptual functioning.

It is my understanding that you also have some interest in these same functional deficits, and because of your interest you invited Dr. Miriam

Bender to be with you today. In this area, Dr. Bender is without peer, and it is with no little pride that I present myself to you as her colleague. As you know already, she cannot be with you because of serious illness in her immediate family. I hope you will be content with Avis instead of Hertz!

In making this presentation I am fairly certain of two things:

1. What I shall present certainly is not relevant to all deaf children.
2. What I shall present probably is quite relevant to many deaf children.

With these reservations in mind, let us consider some of the major issues of concern.

The first major issue is this: I assert that for many learning-disabled children, certain low-level functional deficits underlie (and possibly cause) their well-known high-level deficits in school achievement (especially achievement in reading). For most children, measures of intelligence (IQ scores) will predict fairly accurately their achievement in reading and other school learning tasks. For the learning-disabled child this is not so. The learning-disabled child achieves significantly below predicted levels when those levels are based upon IQ measures. There are, it seems, certain abilities which IQ tests either do not tap or which they tap inadequately. These abilities are what I call "low-level functional abilities," and it is deficits in these very abilities which appear so frequently in the learning-disabled child.

The second major issue is this: High-level functional efficiency probably grows out of, and is based upon, previously developed functional efficiency at relatively low levels. In other words, proper development of the low functional levels is seen as the foundation for later development of high functional levels.

The third major issue is this: For many learning-disabled children, remediation of low-level functional deficits can often remove the roadblocks to efficient functioning at higher and more complex levels.

LOW-LEVEL AND HIGH-LEVEL FUNCTIONAL DEFICITS

With these three issues as a springboard, let us now turn to some specifics. Let us consider some actual behaviors of some real live kids with learning disabilities.

The transparency which you see on the screen was reproduced from a single 8½" X 11" sheet of lined paper which contains the written responses of a learning-disabled child. The lines do not show on the screen because the lines were blue, and thus did not reproduce.

The little girl who made these responses had a measured IQ of 99, and was in fourth grade. The task which the teacher set was this: The teacher would say something and the child was to write what the teacher said. There were 12 separate items where the teacher would say something (a short series of letters, digits, or a short phrase), after which the child would write what she heard. All these items are from Slingerland (1970:23). Although this little girl was in *fourth* grade, this particular test is from the Slingerland series designed for children in the latter part of *first* grade (February–June) and early *second* grade (September–January). This suggests quite strongly that all errors are extremely significant, since the test was designed for children at least two grade levels below our little girl's placement; and remember that *this particular child is not mentally retarded.* I recommend strongly that you consider certain selected tests of the Slingerland series for use with deaf children.

The responses reproduced on the screen are rather dramatic examples of low-level functional deficits which appear to interfere with adequate high-level functioning. The major low-level deficit which leaps to our attention is that the child has *serious problems in organizing space relationships among the lines she writes on paper.* Note some of the details. The child was first told there would be 12 separate items, and was asked to number the page from 1–12 before any of the test items were administered. She began appropriately on the left edge of the paper. But when she must continue numbering at the top with item 8, she places her numbers at the extreme right edge of the paper. This results in responses on the *left* side of the paper being written to the *right* of the numberings (the conventional way of doing it), while responses on the *right* side are written to the *left* of the numberings (the reverse from the conventional way). Regardless of the reason for this particular performance, the following are examples of problems in organizing fundamental relationships in space:

1. There are numerous examples of left-right reversals of letters and numerals (especially numerals).
2. There seems to be a rather gross problem of left-right confusion in dealing with the total space of the sheet of paper itself. The last four items (9–12) read properly if one reads from right to left. I infer that this child has compensated for her left-right confusions by remembering that you write from the *outside* edge of the paper and go toward the *inside* of the paper. This would be a good rule if you always start on the left side; however, if you start on the right side of the sheet you would produce the gross reversals seen in items 9–12. (It should be noted here that this particular administration of the Slinger-ability, so the teacher decided to administer the lower level of the test. booklet, where the items have printed numberings. The test appropriate for this child's grade placement proved completely beyond her ability, so the teacher decided to administer the lower level of the test. The proper test booklet for the lower level was not available, so the teacher improvised by having the child number a blank sheet as described above. In this case, the non-standard improvisation actually yielded some additional information.)

I suggest that this particular child is exhibiting a low-level functional deficit which is interfering with her achievement in high-level tasks such as writing and reading. We can see the confusions in writing, and from other testing we learn that she is significantly below expectancy in reading. The particular low-level deficit is confusion about relationships in space. These spatial confusions are revealed sharply in the difficulties the child exhibits in dealing with the fundamental directions of left and right.

The point of view presented here is that *this child does not have a reading problem.* The real underlying problem (or at least one problem) is that she organizes space inefficiently. She cannot deal with the relationships among those lines in space which make up letters, words, sentences, paragraphs, and even whole books. If we wish to define the problem in academic terms, we could say she has *reading readiness* problems.

Many learning-disabled children have low-level deficits other than those of organizing space. Many also have difficulty in organizing relationships among events in time. Just as objects exist in space and form space (spatial) patterns, in a similar fashion events occur in time and form time (temporal) patterns. Spelling, for example, is a high-level task where the child is required to produce letters in the proper time order if he spells a word correctly. It is not enough to produce all the proper letters in a word; the proper letters must also be arranged in the proper time order. Typical spelling errors which suggest temporal confusion are those errors of transposition of letters within a word, e.g., "first" is spelled "frist" and "girl" is spelled "gril." In each case all the letters are present in the word, but the *temporal order* in which the letters are produced is incorrect.

The learning-disabled child not only has difficulty in those school-learning tasks which require the efficient organization of space and time; he also is in trouble when the task requires that he organize space and time concurrently. The task of writing is a case in point. In writing, the child must make certain organized movements, and all movement occurs in time. But the organized movements in time must conform rather precisely with the organization of the lines in space which those writing movements produce. Thus time and space must go together in the task of writing, and this presents a real problem to many learning-disabled children.

If a child has problems in putting space and time together, such problems often will show up when he is asked to copy sentences from the chalkboard. Such a child will tend to compensate for his basic problems by breaking the copying task down into more manageable units. He tends to copy letter-by-letter, or at best word-by-word. If he really copies efficiently, he will see whole phrases, or even whole sentences, and will then reproduce what he sees. This efficient performance demands that he organize what he sees in space and then translate this organized input into appropriate motor output which must occur over an appreciable amount of time. But the learning-disabled child cannot do this. He cannot put space and time together. So he copies letter-by-letter or word-by-word, and thus avoids the *simultaneous* organization of space and time.

Many learning-disabled children do not demonstrate directly the confusions I have presented thus far. Many children have serious problems of spatial and temporal confusion, but they do not make overt errors such as spatial reversals ("b" for "d") or temporal transpositions ("frist" for "first"). The spatial and temporal problems of this type child reveal themselves in the grossly inefficient processes he employs in completing a given task. This child may "get the right answer," but the process by which he does so is painfully inefficient. Here are three examples of this phenomenon:

1. A fourth-grade child with an IQ of 140 could barely read. His own explanation of his approach to the reading task went something like this: "For me, some letters always get turned around. But there are other letters which never get turned around. When I am reading I figure out every word like this: I go through the word and pick out the letters which don't get turned around. Then I get the other straight by comparing them with the ones that don't get turned around." One can scarcely imagine a more painful, agonizing, and inefficient method of

decoding a printed test. This child can read, after a fashion, but his reading process is labored in the extreme.

2. A teacher noticed that one boy engaged in strange behavior whenever he was reading. While reading he would put his hand on his chest; first on one side and then on the other. The teacher asked him why he did this. The boy replied, "Oh, I have trouble with this 'b' and 'd' business. But I've got it figured out. I put my hand on this side (left), and feel my heart beat. If the stick is on that side of the ball it's a 'b.' I put my hand on this side (right), and I don't feel my heart beat. If the stick is on that side of the ball it's a 'd.' It's 'b' for beat and 'd' for don't beat." Obviously, this is an extremely inefficient procedure for organizing the spatial relationships among individual letters.

3. Even the funny-papers provide us with examples of inefficient processes. In the cartoon strip *Beetle Bailey* there is a character named Zero. In many ways Zero is portrayed as a character who it not quite "with it." From our point of view he typically is lost in time and space. One episode in this comic strip portrays the basic problem. The men are marching, and Zero as usual is out of step. The sergeant says to him, "Zero, don't you know your right foot from your left foot?" To which Zero replies rather indignantly, "Of course I do. My left foot is on the same side as the hand that has eight freckles on it." The sergeant then asks the perfectly obvious question, "Then why are you always out of step?" Zero's answer gives us a beautiful example of inefficient processing. He says, "Because, by the time I've counted the eight freckles you guys are on the other foot."

All three examples highlight a basic problem common to many learning-disabled children. In each instance, the basic problem is that the child must deal *cognitively* with tasks which the normal child performs *automatically and without employing cognitive processes.* The well-functioning child reads in such a way that his high-level or cognitive attention focuses upon the message which comes from the printed page. He does not find it necessary to "think about" the difference between "b" and "d," "was" and "saw," "u" and "n," etc. He deals with these relationships automatically. Put another way, he processes such relationships at *automatic* or *sub-cognitive* levels, thus freeing his cognitive levels for their proper role of attending to the message which the printed page conveys. The learning-disabled child, on the other hand, often must deal cognitively with those elements of the task which should occur automatically, but which do not. In other words, the learning-disabled child typically gets bogged down in the *mechanics of reading*, which results in an unfortunate drain-off of cognitive attention.

Thus far I have discussed spatial and temporal problems of learning-disabled children as these children are confronted with tasks of high-level complexity such as reading and writing. A growing body of evidence suggests strongly that learning-disabled children exhibit spatial and temporal confusions even when the task is far less complex than tasks such as reading and writing. Birch and Belmont (1964) presented a fairly simple task to a large number of children. The task consisted of a number of test items where the examiner tapped out a series of dots and dashes. The child was then shown three cards with three different patterns of dots and dashes. He was then asked to select the card which looked like the dots and dashes he had just heard. This fairly simple test successfully discriminated between good readers and poor readers. I submit that the test tasks of Birch and Belmont are logically far less complex than is the task of reading. Yet this less complex test sorted out the good readers from the poor readers. It is this sort of research which inclines me toward the opinion that low-level functional deficits underlie high-level functional deficits in learning-disabled children.

My own research underscores the point that in learning-disabled children problems in highly complex tasks such as reading and writing go hand-in-hand with low-level functional deficits. I recently conducted a study which began with sorting out two different populations solely on the basis of their achievement in high-level school learning tasks. All children in both populations had IQ scores of 90 or above, so no "mentally retarded" child was included in either population. Once these two populations were identified, I then drew random samples of ten children from each population at each age level. A fairly simple test was then administered to each child in the sample. The test consisted of (1) presenting the child with pairs of temporal patterns auditorially and visually, with the child asked to judge "same" or "not same," and (2) presenting the child with single temporal patterns auditorially and visually with the child asked to reproduce the presented pattern vocally. All of these tests successfully discriminated between the "normal" child and the learning-disabled child. In other words, the child who had problems with high-level tasks such as reading also demonstrated problems in the test tasks which were much less complex than the task of reading.

Extensive clinical experience confirms the findings of the above cited research. What I am suggesting here is that many learning-disabled children demonstrate a pervasive disorientation to the basic dimensions of space and time. These disorientations crop up in tasks which occur at both high and low levels of complexity. Implicit in my suggestion is the possibility that if we can remediate the low-level deficits we may be able to pave the way for remediation of the high-level academic deficits. My own clinical experience suggests most strongly that such an approach is quite fruitful.

DEVELOPING HIGH-LEVEL FUNCTIONAL EFFICIENCY

The ability to function efficiently in highly complex tasks such as school learning is a developed ability. In normal development the child progresses from lower to higher levels. In order for this developmental progression to take place, it is essential that the young child have many and varied opportunities to interact with his world. He needs to explore and to experiment with all the different sights, sounds, and "feels" in his environment. As he engages in these explorations the child simultaneously discovers his own body and the world within which his body operates. He first organizes his body, and he then uses his body organization to organize relationships among objects and events in the external world. This early dual organization, at low functional levels, of his internal (body) environment and his external environment provides the foundation for later development at higher levels of cognitive and conceptual functionings. Kephart describes a developmental hierarchy in the following order of increasing complexity:

1. Reflex
2. Motor
3. Motor-Perceptual
4. Perceptual-Motor
5. Perceptual
6. Perceptual-Conceptual
7. Conceptual
8. Conceptual-Perceptual

I consider the first five of these eight developmental stages as relatively low levels, with stages 6, 7, and 8 representing higher levels. What I am suggesting throughout this presentation is that learning-disabled children typically demonstrate functional deficits at one or more of the lower stages, and that such low-level deficits interfere significantly with the efficient functioning of the higher stages.

I will now describe briefly each stage as it develops in the normal and well-functioning child.

1. *Reflex stage.*—Most of the new-born infant's responses are reflex responses. A reflex is a rigid response. It is a highly specific response to a highly specific stimulus. As the infant and young child passes through this stage, he must learn to expand or elaborate his reflex responses so that they become less specific and more generalized. As he moves into the next (motor) stage, he develops the ability to make more flexible, less rigid responses. Thus, he develops more sophistication in his responses to his environment.

2. *Motor stage.*—At the motor stage the infant and young child develops two important abilities:

(*a*) He learns where the different parts of his body are, how the different parts move, what each part can or cannot do, and where each part is located with respect to all the other parts. What is so important for later learning is that he gets the internal space of his own body sorted out and organized. This process is called *differentiation.* Differentiation of body parts gives the child an *internal* organization of space (left, right, up, down) which he later learns to project outward so that he can then organize *external* space in the world "out there." For example, learning that he has two lateral sides to his own body (left and right sides) gives him the starting point for sorting out horizontal directions in external space. If he learns to distinguish the difference between the letter "b" and the letter "d" efficiently, he first must be able to distinguish internally the difference between left and right. This basic difference between left and right is the *only* difference between these two letters. This fundamental difference must exist within the child before it can exist in the world external to the child. Similar comparisons can be made for vertical dimensions. "Up" and "down" must exist within the child before these dimensions can exist in his external world.

(*b*) He must learn also how to *integrate* his body parts so that he can make efficient and generalized movements which permit him to accomplish appropriate movements efficiently. In learning to organize his movements the child is also learning, at very basic levels, to organize time. All movement occurs over time, and in learning to organize time internally (in terms of his own body movements), the child is developing an internal awareness of time. He later will learn to project his inner time scale outward so that the temporal organization of events in the world "out there" are organized and not random. For example, spelling demands that the child be able to write or say each letter in a word in its proper time sequence. To spell efficiently the child must be able to organize the time order in which the letters are formed.

3. *Motor-perceptual stage.*—At the motor-perceptual stage the child uses his emerging motor organization to organize his visual and auditory modalities. *By repeatedly comparing incoming data for perception with organized motor data, the perceptual modalities of vision and audition eventually develop the ability to organize incoming data directly.* Kephart (1971) refers to this phenomenon as the "perceptual-motor match." Through countless explorations, the child matches what he sees and hears to what he "feels." In the process he learns that what his eyes are seeing and what his ears are hearing "match-up" with what his hand is feeling. Through repeated experiences like this, the visual and auditory modalities themselves in time become organized. If, for example, the child holds an object in his hand and also looks at the object, he is getting information about the object simultaneously through two different modalities. His hand tells him what the object "feels like" and his eyes tell him what the object "looks like." Through countless repetitions of similar experiences, the visual modality learns to organize directly those incoming data for visual perception.

4. *Perceptual-motor stage.*—Once the visual modality is organized, the eye can now guide the hand or even the whole body. The eye can fix upon an object and the hand can be brought into contact with that object. Much rich and varied experience is needed at this stage so that efficient and flexible coordination of eye and hand develops.

5. *Perceptual stage.*—As eyes and ears learn to organize incoming data for perception directly, the child can now look and listen and obtain a wealth of information from the world "out there." Through his eyes and ears, the relationships among objects in space and events in time fall into place systematically and efficiently. His eyes and ears tell him what is really "out there" and what is going on "out there."

6. *The perceptual-conceptual stage.*—Now that the child can get organized information through his eyes and ears, he can begin to develop concepts or abstract ideas. Thus he is able to develop extremely efficient means for absorbing and classifying a vast amount of information. At this particular stage (perceptual-conceptual) the child develops a new concept by discriminating among perceptual data. The concept "cat" and the concept "dog" emerges when the child learns to detect the perceptual differences between these two categories of animal.

7. *The conceptual stage.*—At the conceptual stage, the child can generate new concepts without the necessity of processing perceptual data. He can simply sit and think, and generate new concepts. He can play one concept against another, and come up with a third.

8. *The conceptual-perceptual stage.*—At this last stage, the child's previously-developed concepts influence his perceptions. There is both a positive and negative aspect of this phenomenon. Positively, previously-developed concepts can pave the way for new insights, for fresh perceptions, or even for knowing what one should observe. Negatively, pre-conceived ideas can limit and distort present perceptions; e.g., pre-conceived ideas of racial or ethnic characteristics can influence what the observer actually perceives in an individual from a racial or ethnic group.

Remediation of Low-Level Functional Deficits

Many professionals are remediating low-level functional deficits in learning-disabled children, and are finding this approach most fruitful. Some specific techniques are found in Kephart (1971) and Early (1969). For many learning-disabled children, this particular approach has succeeded where intensive and extensive tutoring had failed. Typical remedial tutoring usually is done at higher conceptual levels, and fails to recognize those low-level deficits which often disrupt the efficient functioning of highly complex learning tasks.

A large-scale successful program employing the rationale presented here was understaken by the Alfred I. DuPont School District in Wilmington, Delaware in the latter part of the last decade. Dillon, Heath, and Biggs (1970) describe the program and its first year of operation.

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PROGRAMMED INSTRUCTION: IT'S WORTH YOUR CONSIDERATION

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There are many things that make a hearing impaired child special. Probably the most important thing from an educational point of view is his difficulty in developing language. In various ways this interferes with efficient learning, particularly the kind of learning we normally associate with school. It is therefore necessary that we make the most efficient use of his time spent in the classroom.

A medium that is changing the learning climate in many classrooms for the hearing impaired is programmed instruction. Programmed instruction may be defined more simply as validated instruction. This means that the material has been developed to achieve predetermined objectives, has been tested and the data collected confirms its effectiveness.

There are six things that characterize programmed instruction. (1) Programmed instructional materials are based on predetermined objectives. A teacher can compare the stated objectives of the program with the skills of her students. This can help the teacher select programmed materials to meet individual needs, thus helping to eliminate boredom and frustration often caused by the student using instructional materials which present information which he has either previously learned or for which he does not have the necessary prerequisite knowledge or skills to fully comprehend. (2) The frames of information are sequenced logically. The materials build in complexity as the student progresses through the program. (3) Programmed instructional materials provide immediate confirmation. When the student responds, he quickly learns if he is correct. (4) The student is constantly interacting with the instruction. Programmed instruction does not create a passive student. It requires a student to be actively involved through interaction with the instruction presented in the program. (5) It allows students to progress at their own rate. When a student successfully completes one unit of work, he can go on to the next unit without waiting for the other members of his class to catch up. (6) The teacher knows at all times the student's progress with respect to objectives. A teacher knows if the program's objectives have been reached by giving a post-test which tests the skills described in the objectives. The post-test also provides the teacher with information on exactly what skills were not attained by the student.

Other than the Project LIFE/GE materials, there are very few commercially prepared programmed instructional materials that can be used with deaf learners without revision. However, teachers of the hearing impaired, trained in the techniques of programming, know how to adapt commercial programs or develop new programs. Too often programmed instructional materials that are not designed for hearing impaired children, do not provide sufficient opportunity for review. The hearing impaired child is often unable to grasp the information and retain it. Periodic review in a program can help provide repetition needed to assist in recall. Hearing children have the opportunity for auditory review of school experiences. The hearing impaired child does not have such extensive opportunity for review. It is therefore important that the program provide periodic review in order for it to be effective with hearing impaired children.

Having selected or developed appropriate materials, the teacher may make use of various strategies for their utilization in the classroom. The teacher may have all members of a class working independently; she may also have some members of the class working independently while she works with the other members of the class in a group situation.

The innovative teacher can find a wide variety of uses for programmed instructional materials. The materials may serve as the core of instruction. They can also be used for reinforcement, concept expansion, remediation and student initiated exploration of a topic.

The formats of presentation, response and confirmation incorporated in programmed instruction are also varied. Many programs are presented in printed form in a programmed text or booklet. The student writes his response and receives his confirmation by comparing his answer with the one printed in the text or booklet. Programs may also be projected with filmstrip, slide, movie and overhead projectors. Students can make a written response and receive confirmation from a booklet or their teacher. Students can also respond to projected programs on response devices and receive their confirmation from the device. The innovative educator can utilize whatever format is appropriate to the needs of his students.

Project LIFE has developed programmed instruction filmstrips in the area of language, thinking activities and perceptual training. These materials can be used for teaching handicapped and non-handicapped children. The children interact with the programmed instructional materials in conjunction with the General Electric Student Response Program Master. All of the Project LIFE programs have been field tested with hearing impaired students.

The Student Response Program Master can also be used to provide confirmation and control the presentation of teacher-developed programs. By using a copy stand or visualmaker, a program can be made into slide format. The correct responses for the program may be coded to any one of the eight response patterns used to activate projected material through the Student Response Program Master.

For the past three years the Southwest Regional Media Center for the Deaf has functioned as a clearinghouse for teacher-developed programmed instructional materials. This means that copies of the programs have been made available at cost upon request. Catalogs containing abstracts of these programs have also been provided upon request.

Summer institutes in the development of programmed instructional materials have been conducted annually at the Center. An offshoot of these institutes has been a coordinated effort by several schools in developing and testing each other's programs developed in the area of language. The vocabulary and sentence structure utilized in these programs have been selected to make them compatible with the Project LIFE materials. The teachers have designed, edited and tested each other's programs. In this manner they have shared and benefited from each other's expertise. Test data have been obtained from the participating schools on each of the programs. As these programs have been developed and test data acquired, they have been included in the SWRMCD Clearinghouse of teacher-developed programmed instructional materials for hearing impaired students.

Over the past three years the SWRMCD has sent out 703 copies of teacher-developed programmed instructional materials upon request. The requests indicate that an ever increasing number of programs are considering the use of programmed instructional materials for their instructional programs. It may be well worth your time to consider this medium in planning your instructional program.

Discussion

Discussion limited to clarification of comments of the speaker—places to buy, cost of materials, etc.

THE YOUNG TEEN AGE DEAF AND READING

Sister Catherine Fitzgibbon, CSJ, teacher, Cleary School for Deaf Children, Ronkonkoma, N.Y.

The terms "teenager" and "reading" evoke many different reactions within me. Both terms are challenging, exciting, frustrating and refreshing and I love them! This combination of terms does not always "go together" but as a classroom teacher I am going to share various ways I used to develop some relationship between the teenager and reading.

Teenagers are unique people seeking what we all want, truth, beauty, freedom and peace. They are apparently going through the same things we experienced when we were their age. It seems to me, however, that there is an important difference at this time in history. The social and educational demands we have imposed are exceeding to a great degree those that were imposed on us.

Dr. Leo Buscaglia from the University of Southern California is a prime advocate for teaching life rather than subjects. I am in agreement with him. Life pressures are now more intense and so jet propelled with a need to advance and succeed that the simple pleasures of living and being are sometimes eclipsed. Do we take time to find the teenagers interests and proceed from there or do we presume to know what he needs and just begin?

With those thoughts I would like to make some comments on the term reading. Donald Cushenberry defines reading as a complex act of recognizing visual symbols and interpreting these symbols in terms of the readers' background of experiences. Reading includes word perception, comprehension and reaction. While all these areas are important, I find most of my problems in reading involve comprehension and reaction. To read properly a person should grasp the meaning and intentions which the writer wanted to convey.

In our work, we endeavor to provide as many experiences for the students as possible. We know that the lack of language is a monumental deficit when we try to comprehend. Perhaps we can think back to our own struggles in French comprehension. In reality, however, no matter how many experiences we provide can we really cover every experience we encounter in a book? Of course not. What we can do is to continue to use every means at our disposal to broaden language, reaction, skills and experiences.

In our school we have decided on a basal reading series that would carry through the school from the primary to upper department. The *Open Highways Reading Program* published by Scott, Foresman and Company was chosen and is used as the stable reading program. This does not negate the use of other reading materials but rather provides the student with a sequential learning of skills. The upper department did not begin with this particular series but we have been using it for three years and it has many "pluses."

The Open Highway Reading Program is designed especially to meet the needs of children who have encountered roadblocks in reading. The book I have used for two years is written on a second to fourth grade level. This level is particularly helpful in teaching children who lack competence in reading skills they should have previously acquired. We have found that individual work using these skills meaningfully has increased the older students reading competency.

At times the content, which is mainly geared to the interests of nine and ten year olds, has been a problem to twelve and fifteen year olds. I found them rebelling about "babyish" stories. Since this occurred, relatively good success was accomplished by telling the class beforehand that this was a story for younger children but there were new words that would help them to understand future stories.

One of the great purposes of this series is to develop language skills and verbal thinking with detailed attention given to the visual scrutiny of words, to auditory discrimination of sound (I use this for speech work) and the correction of individual errors.

Trying to finish the book in a year is not recommended by the publisher. To facilitate planning, the book is divided into six sections and depending on the ability of the child, a teacher can plan to cover a certain number of sections. Each new skill is based on previous skills and experiences.

I am not advocating any one particular series. I do believe, however, that the reading system in a school can profit by any reading material that has the teaching of reading skills taught in a sequential manner. I also believe that each teacher must see his or her role in making a substantial contribution to a total set of goals.

Now that I have outlined our basic program I would like to branch off to the supplementary work that is so important.

The late Dr. James Allen, Jr. said that the "educational moonshot for the '70's was the right of children to learn to read." He also made the comment that this would "be far more difficult than landing on the moon." It seems that he was correct! The above statement was quoted in an article by Lois Bing called "Vision and the Right to Read Effort." She calls to mind the need to understand the role that vision has in reading. It is more than 20–20 vision! Realistically, vision includes three general areas—physical, physiological and psychological. It is the last area which has become important to me, the classroom teacher who teaches reading. According to studies, the psychological area of vision encompasses the ability to perceive likenesses and differences in form, position in space, size and space relationships, visual memory and memory for visual sequence and figure ground.

Last spring at Cleary School we had a fifteen hour in-service course given by two ophthalmologists. They were very helpful in indicating some reasons why some of our children were not learning. Most of the work they did was for the younger children but I applied various aspects of it to my students. Many of my students had poor concentration habits and were not retaining visual clues in words or phrases. The use of an educational game called *SCAN* proved to be many faceted. Not only did it afford practice in four different types of visual perception but it also aided in group interaction. Vision work takes time and in many instances we tend to forget that our older students need it.

As previously stated, experiences are an important part of learning. Teenagers bring new emotions to their learning experiences. Many of the problems of the deaf teenager in reading stem from the inability to express himself and comprehend meaning because of a lack of language. They seem to take a specific and generalize it to a common single attribute. Have you ever read for example that "the Irish setter sat at his master's feet?" I have found that often having learned the word dog, all dogs are dog with no special breed or name. Their lack of words at times is frustrating.

Our positive aspect of this problem is that while they are struggling for words they are experiencing, reacting to, and processing their perceptions of things, events, places and people. Later when they meet similar things and events they do put them together. Last year in the fall, for example, we studied about the ocean, talked about it, looked at pictures, etc. Later, in the Spring, we went on a trip to the ocean for a picnic. One of my fifteen year old boys, who is slightly brain damaged as well as deaf, sat and watched the waves crash to the shore. He eventually called to me and said, "Sister, is *that* the ocean?". It was a beautiful experience for both of us.

This year we purchased a new revised Specific Skills Reading Kit. Skills such as Following Directions, Using Context Clues and Getting the Main Idea are contained in individual books which become more difficult as the student progresses from book A to book F.

The same type of work is presented in various methods by using the well known *S.R.A.* kits and the *Readers Digest* student books. Again, remembering the uniqueness of each student and his different needs and interest, all the above have proved invaluable in setting choices before the class.

For students who needed more immediate work in reading comprehension I used the Sullivan Series of Programmed Reading. Here again the problem of easy or "baby" work arose. Through very serious and open talks, the class gradually came to realize that everyone can not do the same work and some are better in one subject than in another. This occupied a sizeable amount of time in the beginning of the term but the end result was worth it.

In my experience, the fascination that 11 to 13 year old boys have with monsters is similar to what 13 to 17 year old girls have with movie magazines. Before I began to investigate and really use the interests of the class I would dismiss their importance or relegate this type of interest to lunch time or recess time. Now I use it as part of my supplementary reading program. One of the teachers who has created many games devised one called the "Monster Game". It is amazing how much information and reading is involved in finding out the names of prehistoric animals, how they are produced in the movies and T.V. and other various and sundry scientific items.

Movie magazines and romance comics are a different type of challenge but here again we can find out just what students are interested in and perhaps have a common ground to begin remedial work. However, this type of reading also can be a hazard. All students whether hearing or deaf should be taught how to check reputable sources for accurate information.

Language and Reading are so closely intertwined that I find it difficult to separate them. The varied meanings of words and the subtle inferences found in readers, novels and subject textbooks present constant challenges to upper grade teachers and students. All the skills that we as teachers try to teach our students are only means to an end. For a student to really read he must gain a clearer understanding of a given topic. Other goals would be to perceive a meaningful relationship between social living and history, and to understand the difference between fact and opinion.

Keeping the ever present problem of language in mind, I would like to pursue the term "reading" in relation to the young teenager's struggle with content subjects.

One of my favorite subjects is Social Studies. The pure basics can be presented very graphically but the reading skills needed to actually strive to understand the relationship of the past and the present increase as the scope of matter increases. At every presentation of Social Studies vocabulary should be introduced. A personal file of new words is a great help. I believe that words such as "arm" could cause much misunderstanding (e.g. "arm"—body part; "arm"—defend with guns, etc.).

At this point older students need instruction in the actual use of the index, table of contents, charts, graphs, card catalog and reference books. This aspect of instruction is very basic and not too exciting but it is one that I feel we should stay with until it is mastered. The time will be well spent and save endless hours of future frustration.

Weekly newspapers from various publishers such as Xerox prove an invaluable aid to keeping classes up to date on current events. These, augmented by a perusal of your daily papers, give the class another type of "outside" reading.

While math does not head my list of favorites I would be the last to neglect it. Our daily lives are surrounded by figures of all kinds. All buying, building, sewing and cooking involve some kind of mathematical process. Once we move into problem solving our problems increase! Time and drill are two important elements to use in working with word problems. Vocabulary, comprehension and the decision of what process to use can be overwhelming and guesses will take over. I have used problems involving the same type of vocabulary for weeks at a time. Eventually it is understood. One item that perhaps you already are aware of is the use of small numbers in problems until the format is understood.

Science is really a challenge. The names of chemicals, ingredients, rocks, and physical functions often prove overwhelming. Some children have an aptitude for this subject and enjoy learning about different "mysteries". I believe we should encourage this and in some way adapt basic concepts to simple language until the concept is understood and then work with the student to show the relationship of words.

Language is so interesting and reading such an enjoyable part of life that I find I keep returning to them. One of the big desires of a teenager is to have success in some undertaking. I tried unsuccessfully to have book reports done on various books. Then I used a series of Teen Age Tale Books containing short stories and had a good reaction from the class. They could write the same kind of report but only read 20 pages. I searched the library and found other short books written on a high interest, low reading level.

The next step to reading a full length book was a captioned film. I decided I would experiment. First I showed a film and then assigned the book to be read and reported. Another time I had a book read and later showed the film. The unanimous reaction was to show the film first and then read the book. I did this with books and films such as *Born Free*, and *Treasure Island.*

The reading of Classic Comics was another attempt to broaden the reading scope of the older students. The vocabulary was difficult but in many instances the pictures helped to convey the message. I felt that this kind of exposure to good reading was justified because in a sense it might well be the only time some would even see the titles *The Iliad* or *The Last of the Mohicans.*

All of the above I have found to be very practical in my classroom. Once the individual teenager is alerted to his uniqueness and the reading program meets his needs I believe that the teacher has launched his own educational moonshot.

This presentation is accompanied by slides.

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NATIONAL TECHNICAL INSTITUTE FOR THE DEAF

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I. Introduction

Progress reports on NTID's development have been given at three biennial CAID meetings prior to this 1973 session. Those of us associated with NTID are pleased to have this opportunity, and others throughout the week, to share with you the advances that have been made since the Little Rock meeting of two years ago.

As you are aware, NTID has just completed its fifth interim year. Since opening its doors to a charter group of some 70 deaf students in September of 1968, NTID has demonstrated a variety of ways to help deaf students become increasingly independent persons, contributing to their communities and earning taxable incomes of note. Narrow-ranged employment choices, unemployment, underemployment and job frustration in a modern society were precursors to the establishment of NTID. A clear need for such a national institution was manifest and accordingly it was established to serve three fundamental purposes: to prepare deaf citizens for direct technical employment and for full participation in community living; to train professional personnel to serve the deaf nationally; and to improve training and career placement of deaf citizens through applied research. Public Law 89–36 created NTID to do these things.

The postsecondary students who have come to NTID have entered essentially with elementary school levels of achievement necessitating unique educational and training methods in order for them to pursue certificate, diploma and degree programs. By focusing on developing technical, personal, social and communications skills in these young deaf people, NTID assists its students to gain competency—technical and social—essential for satisfying and rewarding careers. As history demonstrated, these same students would have little chance of entering conventional postsecondary institutions to gain these skills.

Through the Rochester Institute of Technology, the sponsoring institution for NTID, deaf students may pursue advanced programs with NTID providing support services for them. NTID is thus able to provide a wide range of educational opportunities and, in addition, to investigate methods by which a primarily hearing institution can accommodate a large number of deaf students within its educational community.

NTID serves students on a nationwide basis. Including our present summer enrollment, approximately 900 individual deaf students from 46 states and territories will have come to NTID. Almost all of the graduates and about half of those withdrawn have been or are being placed in jobs or continued their education elsewhere. A small number left NTID for reasons regarded to be in their best interest—their career interests changed or their personal adjustments were difficult. Only 2% of NTID's students have just dropped out.

NTID seeks new solutions to the intensity and reality of the personal and social needs of its students. Seldom do students come to NTID prepared to select careers. Their general knowledge of the world around them, particularly with regard to work, is usually sketchy and extremely limited. NTID must depart from conventional methods of education and training to treat this problem. For example, NTID students receive training during a 12-month period, including cooperative work experiences, rather than the traditional nine months. They begin their academic work during the summer of their entering year by being exposed to a variety of career opportunities. Through courses and counseling they are aided to make decisions about selecting career areas. Graduation exercises earlier this month recognized ninety-two students who received the following recognitions of accomplishment:

	Graduates
Certificate	2
Diploma	22
Associate Degree	49
Baccalaureate Degree	19

Approximately 170 students have completed programs and practically all are employed in a geographic distribution of some 28 states and the District of Columbia.

In August, 1971, three buildings designed to serve the mission of the National Technical Institute for the Deaf (NTID) were begun on the new campus of its sponsoring institution, the Rochester Institute of Technology (RIT). These buildings, intended to complement existing facilities within RIT, are now three-fourths complete; and, as bricklayers encloak the skeletal structures of steel and cement and plumbers, electricians, and telecommunications and ventilation experts implement the plans for energy circulation systems, it is encouraging to report that the construction is proceeding, on schedule.

The buildings, even in their unfinished state, serve as a good symbol of the establishment of NTID programs. Since the charter group of deaf students was admitted to the programs of RIT, an operational NTID is now in its fifth year; and, though faculty arduously refine curricula and counselors, placement officials, and speech and hearing experts continue to provide special support services at a heavy rate, it is equally obvious that a good deal has yet to be done.

Since the Little Rock meeting of CAID, NTID finds itself at the midpoint of its interim program. Taking stock of what it has learned since the Fall of 1968, it has redistributed its management efforts in the manner depicted in the chart shown in Appendix A. In particular, research efforts became a basic function of each operating unit rather than that of a separate division; an Office of Educational Extension was created to give attention to NTID's developing linkages with secondary and other postsecondary educational programs for the deaf; a program of Experimental Educational Theatre was initiated; a Division of Advanced Programs was created to include the functions of support to cross-registered students, training, and the Office of Student Planning and Evaluation; the Division of Technical Education was expanded to include the Vestibule functions of technical mathematics, technical English, technical science, and computer assisted instruction; the overall function of curriculum development and evaluation; and placement.

This distribution of effort also afforded a renewed opportunity to reiterate for the benefit of all involved, the basic mission of NTID: a focus on the technical, personal, social and communication development of deaf students toward the short term expectations of direct employment, community participation, and continued self-education and toward the long term realities of vocational, economic, and social fulfillment (see Appendix B). It is important to observe that NTID is fast becoming a strong force in the upgrading of the socio-economic status of deaf citizenry of this nation.

So as to better understand the task and the challenge of NTID's purposes it might be well to provide a glimpse of average figures determined to date on students who are enrolling in NTID.

1. *They are profoundly deaf:* average hearing level is 96dB;
2. *Their deafness is of early onset:* 99% prior to age 60 months; 95% prior to age 48 months; 93% prior to 36 months; 90% prior to 24 months;
3. *They are young adults when they enroll:* average age, 20 years;
4. *Verbal language difficulties abound:* reading and general verbal skills are at elementary school levels of achievement; and
5. *Communication skills constitute major obstacles to ready learning:* wide differences in backgrounds and abilities in speech, speechreading, use of residual hearing, and use of manual communication are evident in this population.

II. PROGRAMS

Available career areas are very broad with major programs of study grouped under four headings: *Business Technologies*, *Engineering Technologies*, *Technical Science Technologies*, and *Visual Communication Technologies*. Recent additional areas initiated recently at RIT are criminal justice and social work. The full range of career options available to deaf students is listed in Appendix C.

It should be noted that students may exit at multiple points including the levels of accomplishment represented by Certificates, Diplomas and Associate, Bachelor and Masters degrees. The point of exit to employment in all cases results from an analysis of the students' interests, abilities and demonstrated performances at preceding levels of study.

A. TECHNICAL EDUCATION

Purpose

NTID's Technical Education programs are designed to provide post-secondary deaf students with opportunities to prepare for and pursue successful careers as technicians, semi-professionals, or professionals in science, technology, and applied art, making it possible for them to be independent members of society.

Rationale

Research and experience show that most employed deaf workers historically have been concentrated in semi-skilled and unskilled manual occupations; that wages of deaf people have been far below those of people without hearing handicaps; that the employment rate for the young deaf adult has been much lower than the overall U.S. employment rate; that opportunities for deaf employees to move up in their jobs or find other similar employment have been limited; and only rarely were deaf people trained to be professionals. In general, deaf people had not obtained jobs that were interesting, motivating or that held bright futures. To reverse this situation, career-oriented educational and job placement programs are being systematically developed by NTID to overcome the problems of its deaf clientele in a way that meets the needs of potential employers and that will get deaf people on the payrolls.

Since NTID's deaf clientele have varying levels of goals and abilities, NTID manages a comprehensive set of technical curricula for training technicians and semi-professionals; and uses curricula established in the several colleges of Rochester Institute of Technology for training deaf students as professionals, in which case special educational support services are provided to help them overcome educational problems. Thus NTID focuses on the problems of integrating a large number of deaf students into an institution of higher learning designed primarily for hearing students.

In addition, there is a paucity of teachers to work with deaf students in technical fields and NTID makes this possibility available to both hearing and deaf people. Also, research is vital to determine which curricula are best for solving student problems, adjusting to changing employment markets and for measuring the relative effectiveness and efficiency of the various curricular offerings.

Highlights of 1971–72

Three hundred and ninety-three deaf students were provided opportunities to prepare for and pursue technical education through the 32 programs within the Division of Technical Education of NTID or in the several advanced study programs available in cooperation with the other colleges of RIT. Within the 393, were 51 who participated in cooperative work placement and 73 who graduated.

A program in electromechanical technology was offered to deaf students for the first time during this year; a new technical curriculum in surveying was under development; plans for expansion of the NTID Applied Arts curriculum were underway.

Curricula were developed in math, physics and biology on the concepts of individual instruction and self-paced learning. A new concept of English instruction was also introduced. English, so essential for success in all technologies, is now being related directly to students' career interests.

All students who took courses in the several colleges of RIT were provided educational support services; including interpreting, notetaking, tutoring, and special academic advisement.

Highlights of 1972–73

Opportunities are being provided for 473 deaf students to prepare for or continue in specific technical education programs. Of these, approximately 58 will work in cooperative jobs and some ninety will graduate and go into employment.

All NTID curricula were in some stage of re-evaluation by use of the curriculum development process model developed in 1971–72. The analysis seeks to evaluate the jobs and skills related to the career programs of NTID; to verify the objectives of all curricula and the instructional approaches used; to design and use an evaluation plan for all NTID curricula; and to design and use procedures to keep curricula up to date with the needs of employers.

NTID will continue exploring new teaching techniques and evaluating their effectiveness. By concentrating on computer assisted instruction and using the unique capabilities of television, films, and other media, NTID will attempt to reduce the learning time leading to mastery of technical skills for all deaf students.

Since successful job placement is one of the primary goals of NTID, during 1972–73 employment objectives emphasized continued development of a nationwide network for placing students. This network includes ways for placing students in cooperative jobs, ways for getting successful job placement for NTID graduates and further developing means to keep track of job experiences. The placement emphasis focuses on research on those things, including teaching methods, that influence the career choices of NTID students as well as their impact on the success and satisfaction of students in employment.

1973-74 Planning Objectives

1. *To make it possible for deaf students to obtain paraprofessional, semi-professional and professional employment by developing the necessary technical skills.*

The number of students in technical programs will remain the same as for the preceding year. New programs begun in 1972–73 will continue developing in 1973–74.

2. *To reduce the time required to achieve necessary levels of skill.*

NTID will continue to measure the efficiency and effectiveness of different teaching approaches and how they affect the time required for learning and the skill levels attained. In addition to materials developed in NTID, commercial films, slides and printed material will be evaluated for their usefulness.

Various telecommunication tools will be evaluated for possible use as instructional devices; particularly the picture telephone will be evaluated for use as a link with an instructional computer.

3. *To evaluate in detail the curricula for training medical records technicians and medical laboratory technicians with respect to NTID's curriculum model.*

Current trends and needs of job markets will be evaluated, analyzed and compared with skills being taught in each of NTID's technical curricula.

4. *To gather and collate into usable form vital data on student programs and progress.*

NTID continues developing a student programming, advising and evaluation system that includes automated collection and processing of vital program data. Two phases of this Student Programming and Program Evaluation System (SPPES) will be ready in 1973–74: degree auditing and student follow-up.

5. *All students who desire employment and who have the necessary skills will be placed in jobs; at least 80% of those seeking employment will be placed within one month of graduation; the remaining 20% will be placed within three months of graduation.*

To achieve this objective, a system of career development will be assembled to coordinate all aspects of the function of selecting a career. This will involve the Summer Vestibule program, career selection, program sampling, vocational counseling and placement. The elements currently exist within NTID, but will be organized and coordinated to minimize lost effort.

Another aspect of achieving this goal will be the continued collection of data on student performance in jobs after they leave NTID. This activity is increasingly important as the first large graduating classes leave NTID for jobs.

6. *At least 80% of students ready for work-study programs will be placed in cooperative jobs.*

This objective assists both objective 1 and objective 5. Through on-the-job experience students will be able to make their places of work become laboratories where they can apply their newly-gained technical skills.

7. *Specific job requirements for those curricula in advanced education from which NTID students will graduate, will be established.*

This objective is essential to evaluation of student progress and to assist them in career selection and program choices.

8. *The number of employer contacts will increase by 10%.*

Increasing numbers of contacts is essential to inform employers of the technical skills NTID students have. Since deaf people traditionally have been excluded from the areas for which NTID students are being trained, this is basic to opening these job markets to the deaf.

9. *To make use of new facilities for supporting the educational objectives of technical programs.*

During the second half of the year all classrooms and laboratories and new equipment will be tested and evaluated as operations move into NTID's new buildings.

The capabilities for technical education in the Experimental Educational Theatre, including set design, lighting, costume design and other technical theater technologies and crafts will be evaluated.

B. PERSONAL AND SOCIAL DEVELOPMENT

Purpose

NTID programs for personal and social development are designed to help young deaf people develop personal and social skills that are necessary to their becoming successful members of the nation's work force and contributing members of their communities.

Rationale

Severely deaf young people frequently show levels of personal and social development below those of hearing people the same age. Because of their deafness, they often have not had an even socialization process. They also show weaknesses in general knowledge. Both factors can result in actions which lead them to be labeled immature, irresponsible and unprepared for work or normal social activities. This has the effect of adding to career and social discrimination. Evidence of their weaknesses is seen in the ways they relate with each other, in their lessened ability to accept responsibility for their own actions, in their avoiding to seek out responsibility and in their lack of demonstrated leadership. Basic understanding of personal finance, human sexuality, cause-effect relationships, basic mental and social needs of the individual and other personal and social qualities are often lacking or are underdeveloped. To reverse this situation, social and cultural development programs are systematically developed and used at NTID.

Qualified people with the necessary abilities to help postsecondary deaf students and other deaf groups to improve their personal and social abilities are not readily available. Staff members must be trained in the setting of NTID. NTID must also carry out research to help determine the right program to help deaf students adjust to the postsecondary educational environment and enhance their chances for contributing to society as independent citizens.

Highlights of 1971–72

NTID's Department of Social and Cultural Development provided orientation to college life on the RIT Campus for all new deaf students. During the summer of 1972 students were given opportunities to develop leadership and governance abilities. By arranging special living situations, these special opportunities continued for 15% of the students throughout the academic year. This provided enrichment and social experiences for several students and also served as a research project to test a new technique. Further opportunities for leadership experiences were available to 68 students who planned and conducted the Junior National Association of the Deaf Convention. The NTID Student Congress became part of the RIT governance system. Thirty-eight deaf students joined in its activities. Fifty-five students served in a community service program serving in homes for the aged, hospitals, schools and other agencies; this program has promise for reducing discrimination against deaf persons as well as aiding students in personal and career development.

Formal courses were taught each quarter to try to develop personal and social knowledge and behavior; examples: Personal Finance, Human Sexuality, Readings in Deafness and Introductory Sociology.

Other examples of student activities include taking part on varsity athletic teams (15% of the students), membership in fraternities (6% of the students), and joining in other social and service clubs and organizations (48% of the students).

Counseling services, including test interpretation, were provided. This helped students to understand themselves and their abilities much better. Career selection and personal and social abilities were the primary emphasis of counseling efforts; some counselors tried specializing in dealing with students in given career areas. Individual and group counseling as well as formal classroom teaching were used to achieve the objectives of the department. A Behavior Effectiveness Indicator was developed and a pilot study indicates it may be an effective diagnostic tool in the future.

Highlights of 1972–73

NTID continues to carry on research looking at the effects of different living arrangements on the social growth of deaf students. This includes new approaches to present living arrangements and more contact between hearing and deaf students. A special project is being designed to increase students' independent living abilities. The community services project is now available to more students as the benefits to deaf students who contact hearing people through this program become better understood.

Activities of the Student Information Center in the residence hall are growing due to heavy use by the student body. Other programs involve more deaf students in self-governance and participation in the activities of the campus and the community, especially in leadership positions.

Definite plans for the best educational role for the new residence halls are developing. Further study of the most needed counseling services for NTID's unique student group continues, and program modifications follow to meet these needs. The program of counselors specializing in a given career area is expanding and being studied further.

1973–74 Planning Objectives

1. *Increase the level of job-related knowledge of deaf students.*

Developmental education courses and services will continue at the same level as in the preceding year. Evaluation of the degree to which these courses have impact on socialization and personal development of students will continue and be refined. In addition, students will continue to be involved in long-range planning, in interior design and layout of the new housing facilities, and in conducting tours of the new facilities for other students.

The Experimental Educational Theatre will provide cultural development for all students; experience suggests that 80% of the students may be involved in at least one production and all students will attend at least once.

Captioned films, captioned and interpreted TV, and commercial visual products will be used to provide other opportunities to grow in general knowledge.

2. *Raise the level of socialization of deaf students.*

Counseling and other personal and social services will remain at the same level as 1972–73. A major thrust of the program will be in assimilation of deaf students into a largely hearing world. NTID will seek ways to make the total college cultural programs available to deaf students. Through community involvement in volunteer programs, deaf students will make contact independently with the hearing community.

3. *Improve and increase the interpersonal relationships of deaf students.*

Socially isolated students will be identified and attempts will be made to find new ways of bringing them into relationships with the student body. Group counseling will be tested for its usefulness; a program to develop counselors as role models for students will also attempt to strengthen interpersonal relationships and increase socialization.

4. *Maintain consistency throughout NTID in holding students responsible for their actions.*

A significant factor in achieving this will be the student program and progress evaluation system for monitoring and evaluating students. By this NTID will encourage maturity in students by holding them accountable for their individual or collective actions.

5. *Increase the leadership roles deaf students fill.*

A major contributor to this objective will continue to be the NTID Student Congress. Students, through the Congress, will be involved whenever possible in contributing to shaping their environment. A full spectrum of NTID cocurricular activities will continue at the 1972–73 level to provide additional opportunities for leadership.

6. *Train NTID staff and other professional workers with the deaf to evaluate and assist deaf students in personal-social development.*

The primary emphasis will be on internship programs in counseling. Since professional people with the capabilities to meet all the needs of NTID are not available, new staff will be trained in working in the NTID setting. Other staff of RIT who can contribute to the development of deaf students will be offered training in the needs of these students and how they can help.

7. *Carry on research and circulate findings about the personal and social development of deaf persons.*

Each of the programs in personal and social development is partly experimental. Findings will be documented and made available to other institutions serving the deaf. In particular, the innovative approach of the Experimental Educational Theatre and programs to develop socialization will be explored.

8. *Provide living accommodations (room and board) for all deaf students.*

Although NTID students share in this financial burden by paying a room and board fee, this amount is part of the total obligation figure for this activity. This is in accord with a Senate request and the Guidelines subsequently established by the DHEW Task Force on Tuition Policies at NTID and Gallaudet College.

C. COMMUNICATION SKILLS DEVELOPMENT

Purpose

NTID programs in communication skills are planned to help deaf students to develop and/or strengthen communication skills necessary for success on the job and in community activities. This is done by training students in speech, speechreading, hearing and language; by giving students special support (interpreting, notetaking, etc.); and from research on developing new ways to train students in communication skills.

Rationale

One of the basic social skills that many deaf people lack is communication; speech, speechreading, listening and language usage. For example, 90% of the NTID student population has some potentially trainable hearing; only about 10% have learned to use what hearing they have to best advantage. Each year about 65% of the new students have not developed speechreading abilities which they need in order to function adequately in social situations (if this is their only way of getting information); about 56% of the new students have speech which cannot be understood by the general hearing public, and 21% more have speech which can be understood only by a trained listener. From 85% to 90% of new NTID students are far below the average hearing college student in ability to understand or to form expressive language.

All these communication skills are critical for success on the job. To improve the communication skills of NTID students, and by that to increase their chances for successful employment and community living, NTID seeks to develop communication skills.

Most NTID students taking courses in the several colleges of RIT need interpreting services. This is true also for personal needs and social activities. These needs are met as necessary.

Staff with the necessary abilities to help students who are severely hearing impaired to develop communication skills are not readily available. They must be trained within the setting of NTID. Extensive research also is continually necessary to study problems and develop the appropriate methods to upgrade lagging communication skills.

Highlights of 1971–72

About 18,000 hours of staff services were provided toward improving communication skills of NTID students. Staff designed special curricula to improve individual speech and language skills and to aid in developing leadership abilities necessary to leading independent roles in employment and in the community. Special communication projects included developing materials to acquire spontaneous speech and language samples, improving techniques to evaluate communication characteristics of deaf persons, collecting therapy materials, developing special materials to gather information about communication needs in various jobs, designing and evaluating new equipment for speech improvement, evaluating speech and hearing, and auditory training.

Interpreters provided about 32,000 hours of special interpreting. In addition to direct student services, 20 hearing students were trained to interpret for students in classrooms and non-academic needs. Interpreting staff also developed new technical signs, worked on programmed instruction of the language of signs, and developed and evaluated a video-tape teaching method for training staff and students in sign language.

Hearing instructors were helped to make better use of interpreters and to understand how to communicate better with deaf students. Students were helped to be aware of world events through interpreted national TV news broadcasts.

An effort to make the Experimental Educational Theatre a part of students' language development began. During the past year, 22% of NTID students took part in theatre productions.

Highlights of 1972–73

NTID continued designing, developing and evaluating new equipment for helping students improve their oral and hearing skills. Internship programs were designed to train speech pathology and audiology staff to work effectively with severely deaf individuals. Design of better diagnostic tests for evaluating specific skills in each area was begun. Staff evaluated and revised current curricula where ways for developing communication skills could be improved.

The use of Experimental Educational Theatre was expanded and studied for the best possible use of this idea.

Full-scale efforts continued in circulating all research findings concerned with improving communication skills of deaf people.

NTID continued its design and development of a new course in communication aids for training students with enough residual hearing to use telephones and other communication tools requiring some hearing; students are being trained to be alert to all ways of telecommunication now and in the future.

A way to screen and train interpreters for the deaf was under evaluation.

Formal programs to train selected students to perform hearing aid checks on precision equipment, make minor repairs to hearing aids and make earmold impressions have been designed. When trained, these students assume a leading role, under the supervision of audiological staff, in servicing the hearing aids of other NTID students. This program is helping develop responsible attitudes in students and leading them toward better understanding of the total communication process.

1973–74 Planning Objectives

1. *To provide communication skills education for deaf students.*

All programs operating in 1972–73 will continue to provide the same level of services in 1973–74. In addition, ways to gain more definitive information from secondary schools about previous speech and hearing training of students coming to NTID will be developed. Efficiency in orienting students to the development of oral skills will be improved. Part of this effort will be the continuation and extension of the Occupational Communication Survey to determine the communication requirements for specific jobs.

The approach of specifically relating communications skill development to jobs and real-life situations by the new facilities for the Experimental Educational Theatre will be tested and evaluated. In addition, evaluation and revision of all curricula in speech pathology, audiology, interpreting services and the Experimental Educational Theatre will continue.

Students will also be trained in using several communication devices, possibly including the picture telephone, teletypewriter, and other instruments which become available.

2. *To decrease from 65% the percentage of students lacking adequate speechreading abilities for functioning in social or work situations.*

Existing therapy programs will continue. Evaluation of students' abilities will be refined and improved through further development of the speechreading diagnostic portion of the NTID Communication Profile. Curricula in speechreading will be tested and evaluated.

Ways to effectively identify students without the basic language skills to benefit from speechreading training will be improved and tested.

3. *To reduce the number of students with potentially trainable hearing, but not making use of that hearing, by 10%.*

Programs in auditory training will be extended to those students who can benefit, as identified by their previous training, their evaluation on the Communication Profile and their career needs. Since 90% of NTID's students have some potentially trainable hearing, it will be necessary to have a program of computerized self-instruction in auditory training when NTID is fully operational. This curriculum development will go on during 1973–74.

4. *To reduce the gap in language skills between NTID's deaf students and hearing college students.*

All curricula and evaluation techniques will try for refined measurements that give good displays of the weaknesses in language of deaf students. Through programs of computerized self-instruction in language, the Experimental Educational Theatre and the stress of language development within each of the technical curricula of NTID, students will be assisted to bridge this gap.

5. *To reduce the percentage of deaf students whose speech cannot be understood by the general public.*

Existing programs in group and individual therapy will continue in 1973–74. In addition, computerized self-instruction in speech training will be developed. The diagnostic portion of the Communication Profile will be improved to give a refined picture of the students' speech capabilities.

6. *To provide answers to research questions and circulate findings.*

Much of the program for developing communication skills is essentially applied research. Developmental processes will be documented and findings circulated.

7. *NTID staff, other professional workers with the deaf, and NTID students and RIT hearing students will be trained in communication skills development.*

NTID will begin training and then evaluate the feasibility of having internship programs in Speech Pathology, Audiology, Interpreting and Experimental Educational Theatre. Staff will be assisted to integrate communication development into their courses. All NTID staff and some RIT staff will be trained in manual communication.

Ways for training selected hearing and deaf students to act as monitors in speech, auditory and speechreading training techniques and to carry on the formal classroom training in communication skills in housing and cocurricular programs will be formalized and evaluated.

D. ADMINISTRATION

Purpose

To plan, carry out and evaluate the total picture of activities and resources required to achieve the mission and goals of NTID as defined in Public Law 89–36 and the NTID Agreement and to meet the annual objectives set for NTID.

Rationale

NTID's operations are administratively unique; managers must be trained in disciplines and skills that are different from traditional postsecondary educational administration. NTID's administrative operations are unique because: NTID is a Federally sponsored institution located at a private institution; planning, budgeting and accounting procedures for NTID must agree with the standard accounting practices for private institutions of higher learning and the requirements of the Department of Health, Education and Welfare; instead of being subject to normal Federal regulations, NTID is regulated by Statute (PL 89–36) and Agreement (between DHEW and RIT); for the first time in the history of the education of the deaf a large group of deaf students is being absorbed in a previously all hearing school setting. Among the vast number of operation, accounting and legal differences, a very sensitive problem of NTID Administration during its interim program is recruiting, developing and managing capable professional personnel for working in this setting.

Highlights of 1971–72

The challenge of applying and evaluating modern management methods to NTID in the setting of a private institution of higher learning began with long-range planning efforts. In 1971–72 NTID Administration began a formal plan to carry out long-range planning. The emphasis of this plan is on use of time and basic strategies. Methods such as PERT, PPBS, MIS, and modeling techniques are scheduled for evaluation and possible use in the next years of the interim program.

Extensive formal and informal training helps to develop needed management skills and leadership in NTID's management team. The success of this training program is clearly seen in the number of NTID faculty and staff taking and completing postgraduate studies in higher education, by the number of significant management positions offered to NTID staff members by other institutions and programs for the deaf, and by the number of publications, exhibits, papers and advising roles of the faculty and staff. Eight members of the staff completed advanced degrees in 1971–72: 2 MBA degrees, 2 Masters in Fine Arts, 1 Masters in Education, 1 Masters in Educational Administration, 1 Masters in Speech Pathology, and 1 Masters in Vocational Education. During the past 2 years, 9 members of the NTID staff left NTID to accept significant positions in service to deaf citizens or in the broader stream of education; their new titles include assistant coordinator for a hearing impaired program, superintendent and assistant superintendent in residential schools for the deaf, associate director for research and training, senior behavioral scientist, assistant professor for curriculum development and evaluation, and 3 directors: research and development counseling and special services for the deaf. During 1971–72 approximately 50 papers and publications were prepared by the faculty and the staff of NTID.

The planning, construction and interior layout and design of NTID buildings continued to move exactly on schedule.

This was during a period when construction delays were common. Even during construction, NTID's schedule looks for information from future users of the buildings. For example, a full-scale model of a typical residence hall room was constructed and furnished and placed on view for students, faculty and staff to inspect before the final plans for that room and its furnishings were accepted.

Highlights of 1972–73

In 1972–73 several new and useful tools for long-range planning were under exploration. First among these was a student information data bank that will contain up to 7,500 characters of data on each student; a corresponding automated course planning system will be part of this. Use of Program Planning and Budget System (PPBS) is being evaluated as a tool to assist in program evaluation. PPBS and a quantified plan of work for FY74 is being developed so it can be tied in later with accounting and reporting methods. The use of Program Evaluation and Review Technique (PERT) is also being evaluated for use as a basic part of long-range planning and PBBS. NTID has also assumed an Active Participant (Level II) membership in the National Center for Higher Education Management Systems. Modeling concepts like CAMPUS, HELP, and PLANTRAN and modeling firms, such as Systems Research Group and Midwest Research Institute are also being investigated and evaluated for application to NTID systems.

During 1972–73, NTID Administration continued to coordinate actual building construction and interior layouts, design, equipment and furnishings.

1973–74 Planning Objectives

1. *Coordinate the planning effort of NTID to produce a long-range plan for 1974–79.*

To accomplish this, administration will give continued emphasis to program evaluation. The expected result is an evaluation model for NTID.

By 1974 NTID will be able to demonstrate a communication model and make preliminary tests of its validity to insure effective communication throughout the NTID staff.

A test of the model's validity will be its ability to clarify issues that need resolving. By defining these issues, NTID gains an important planning tool for establishing objectives.

2. *To train managers in management by objectives and long-range planning techniques.*

NTID will continue to analyze management problems and their solution. Since NTID is unique in administrative concerns and problems, this training is essential. Managers cannot be located outside of NTID who have all the requirements of the NTID management system.

3. *To coordinate and produce a plan of work for 1974–75.*

4. *To coordinate a systematic and orderly move of all NTID operations into the new NTID facilities.*

The final design of all interiors will be coordinated during the first half of the year. Procedures for final selection, purchase and installation of furnishings and equipment will be centralized and coordinated.

An effective property control system will be operating to assist in managing the use of all equipment.

E. CONSTRUCTION

Purpose

To provide for building and equipping new buildings for NTID. As stated in PL 89–36 and the Agreement between DHEW and RIT, these buildings will also be used to carry out applied research into the job related factors of deafness and in preparing professional people to serve the deaf nationally.

Rationale

Funds had been appropriated and obligated for planning, site development and construction of NTID buildings on the campus of Rochester Institute of Technology (RIT). The complex consists of three buildings that will be the site of NTID. The largest building is the academic building (210,000 gross sq. ft.) that contains classrooms, laboratories, shops, studios and offices for administration, faculty and staff, hearing and speech facilities, and an Experimental Educational Theatre for career-related training and education in technical theater. The residence hall (206,000 gross sq. ft.) will contain living and sleeping space for 750 students, and support areas. The dining hall-commons building (31,000 gross sq. ft) will contain a dining room and kitchen, mail room and lounge. It will serve as a commons area for NTID students.

Highlights of 1971–72

NTID advertised for bids and the construction contract was signed in July of 1971. Construction began shortly thereafter and reached 40% completion by the end of that year. During this time, an architect was chosen to design the interior layout. At the end of the year, the planning phase of interior design was completed; an equipment and furnishings budget for furnishings and movable equipment was developed.

Highlights of 1972–73

By the end of 1972–73, actual building construction was 80–85% complete; in preparation for occupying the building, all equipment to be bought and installed was determined, bids have been prepared for major items and major purchases, and the initial steps of purchasing procedures will begin pending approval of the 1973–74 budget appropriation for construction that includes funds for equipment and furnishings.

1974 Planning Objectives

1. *To monitor and coordinate the completion of construction of the new buildings.*

Total construction is scheduled for completion on January 21, 1974 although part of this may be completed from two to three months in advance of this.

2. *Final specifications, bidding, purchasing, receiving, inspection and installing of furnishings and moveable equipment.*

Specific plans for acquiring furnishings and moveable equipment have been made and will be purchased and installed following the completion of the construction by the building contractor.

III. Summary Statement

This report includes only the highlights of the many efforts made to advance the general well-being of the present and future generations of deaf people. Other members of NTID are presenting papers at this meeting and participating on panels in which cases further program details are being shared with you. We are encouraged by the progress to date as demonstrated in the performance and accomplishments of deaf students who have been presented with new opportunities at NTID; by the very fine cooperation of the U.S. Congress, the Department of HEW and the Office of Management and Budget; and by the profession at large, the members of which have been most cooperative and helpful in seeing to it that NTID serves the target population for which it was intended and by helping us to hopefully do so in a manner worthy of your continued confidence, trust and support.

Discussion

Paper favorably received.

THE ROLE OF LANGUAGE IN THE CHILD'S DEVELOPMENT

Hans G. Furth, Ph. D., professor of psychology, Catholic University of America, Washington, D.C.

A deaf child may have to cope with all kinds of special psychological problems and the same can be said for his parents and his teachers. But this need not imply that there is a special psychology of deafness. On the contrary, I hold that the primary benefit of research with deaf children accrues to the general science of psychology. In other words, I do not believe that we need a special psychology for deaf persons but we need an adequate general psychology which takes account of the development of all children, including deaf children.

Traditional psychologies of learning or personality development attribute a dominant role to the verbal language of society. According to these theories, deaf children should be severely deficient in intellect and personality in proportion to their severe deficiency in language. But since research and observations have amply demonstrated that adult deaf persons are neither intellectual or emotional cripples, it is time we recognized the inadequacy of these theories and looked for the source of intelligence and personality at deeper levels than language.

If a distinguished educator of deaf children can describe the world of the deaf child as a "timeless world with vague and meaningless comings and goings," this shows you what a bad psychology can do. Instead I suggest to you a psychology based on the theory of J. Piaget who accepts the important role of language but within a psychologically sound order of priorities. Piaget puts the thinking and feeling person first and considers language as but one of many different manifestations of what he calls "symbol formation." With respect to these general capacities of thinking and feeling and symbol formation the deaf child is in no way deficient. Consequently we can now [1] construct a perspective on deafness that would break with the past by putting language where it belongs psychologically—not at the top or at the beginning, but four or five steps down.

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[1] The remainder of this paper is taken from Furth, 1973, Chapter 9, "The Order of Priorities" with minor modifications. Reprinted with the publisher's permission.

The top priorities would be acceptance of deafness, of the deaf person, and of the community formed by deaf persons. Acceptance on the part of parents means recognizing the difference and taking it into account in a loving, intelligent manner. This first step is slow and painful for parents, and it is contrary to what parents unfortunately often hear: "Just treat the child like any other child." It is easy to seduce the parents of a deaf child with the expectation that their child will be "just like a hearing child." Normal parents are bound to fall for this message because it promises them what they wish to hear, but it makes unconditional acceptance even harder. It tells the child: "I love you—on the condition that you behave as if you were not deaf." That is, the condition stresses the weakest point in the deaf child's aptitude, his speech and his language. This form of denial is bound to place the child at an insurmountable disadvantage, and specialists with whom the parents come into contact should do everything they can to make acceptance as painless, as rapid, and as total as possible.

Early, reliable diagnosis of auditory status is a basic requisite, and it must be followed by a realistic appraisal of whether the child is hard of hearing and belongs in the hearing world or whether he is deaf and will need to become a member of the deaf community. Parents must be informed realistically about the potential help of hearing aids. They need the solid foundation of reality on which to plan the future of their child, not the false hope that their deaf child is going to be the one exception in a hundred or a thousand who will make it in the hearing world without the deaf community. No child or parent should be given the burden to prove himself as extraordinary. Let us sensibly look after the average person; the exceptional person will find his own way, because almost by definition he cannot be put into a general framework.

Acceptance of the deaf community, not as a world apart from the hearing world but as a different world within our world, is priority number one for the society at large. If society really wants to help deaf people, to upgrade their economic opportunities, and to improve their quality of life, they should do this in consultation and cooperation with responsible deaf adults and their associations, rather than pretending that "we know what is best for them." To propose to deaf people that ideally their lives should be similar to that of hearing persons so that no deaf community would be needed is a second form of denial which undermines the necessary basis of mutual respect and understanding.

Acceptance of the thinking and feeling deaf child who is growing into an adult is priority number one for education. These three forms of acceptance of deafness—at home, at school, and in society—would effectively reverse our perspective on deafness and would break the historical link of speechlessness and stupidity. Deaf persons—young and old, with or without speech, with much or little knowledge of the English language, successful or unsuccessful in academic programs—could then be treated as intelligent persons according to their stage of development and could be given the opportunity to use their personal resources in the most constructive and socially useful manner.

As the deaf child grows up and enters classes and schools for deaf children, some basic changes can be proposed which go beyond methods to the underlying philosophy of education. In short, education should continue to make real the psychological acceptance and encouragement of what is good and strong in the deaf child. What we need is not merely an innovative and more adequate method for doing the same thing; we need to ask whether the goals are appropriate. Educators quarrel about the method but seem to agree on the ultimate goal: to make the education of deaf children as nearly as possible a replica of the education of hearing children, which is clearly a form of denial of deafness that cannot be missed by the deaf child.

We observed that the intellectual development of deaf children in many instances resembles the development of children from culturally and socially impoverished areas. We used the term *experiential deficiency* to describe the intellectual poverty in which deaf children grow up. How do the hearing children from impoverished areas fare at school? What does education do for them? Does it help them break out of the circle of poverty? Does it provide occasions of success? Does it strengthen their feeling of self-value? No; rather, it puts language and reading as the indispensable precondition that will make all other desirable goals come true. How tragic for these hearing children and what poor psychology! And how similar their plight is to the condition of deaf children.

Is it possible that the educators of deaf children could take the bold step of breaking with the unhealthy educational tradition that has almost completely forgotten the thinking of the growing child and put language and reading as the immediate primary goal of early education? Educators of deaf children have every reason to do so. Their clients are so poor in language that to wait for them to become good readers before nourishing their intellectual development is an almost sure way to deny them intellectual food entirely. On the other hand, both theory and research indicate that intelligence does not build on language, but rather, language builds on intelligence. Hence, if our educational aim is to produce adolescents who are motivated and able to read written material that can challenge their thinking, our first concern should be with the source of the intelligent use of language and not with the medium of language as such. A "school for thinking" rather than a school for language or reading would be important for all young children, bright or dull, poor or rich, but for none is it more urgent than for deaf children (Furth & Wachs, 1974).

This is not the place to repeat what has been said about the intellectual and personality aspects of the child's development. Development springs from inner sources in the person and is nothing but the child's developing intelligence. This intelligence is available to the deaf child in plenty; it makes use of symbols or produces them as necessary. Verbal language is the last and most difficult medium, which is suitable for the adult intelligence but it is by no means the chief medium or occasion for earlier development.

Is education ready for radical changes? Change does not come easily, especially in the institutionalized setting of education. On the other hand, some remarkable innovations are taking place in education in general. Changes that nobody would have predicted some years ago are now occurring in the education of the deaf child, and this may be merely a hint of what could and should happen in all education.

Significantly, educators of deaf children are realizing that sympathetic understanding of deaf people must be the basis for the education of deaf children. Traditionally the formal training of teachers of deaf children or of speech therapists has not provided this long-range perspective. Just as instruction methods for deaf youngsters are of limited use unless the teacher understands the deaf community, so also compilations of researched data on deaf persons do not make much sense without this understanding.

If the main ideas of the psychology of the deaf person as presented here are applied to the formation of the new goal in education, we would have a school for thinking in which the psychological priorities of the growing deaf child would be taken seriously. The school would encourage the initiative of the thinking and feeling self and would subordinate all activities to this primary goal. The school would not slavishly imitate traditional schools for hearing children or put all its emphasis on any one method of teaching language or speech. Thus the longstanding conflict over methods of teaching would recede in importance, as teachers would be directed to ask themselves the crucial question: Are the majority of school activities in which the deaf child engages appropriate and challenging to his present status? When teachers will be able to give an honest yes to this question, a new day for the education of the deaf child will have arrived. Here above all a sound psychology can make a profound, revolutionary contribution to the topic of deafness and learning.

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DISCUSSION AND EDUCATIONAL IMPLICATIONS

Hans G. Furth, Ph. D., Catholic University, Washington, D.C.

This entire session was thrown open as a question and answer period.

Thinking is not an absolute and it is something that must be developed. You must begin this process from wherever the child is at that time. Thinking is the base of all meaningful learning.

I don't advocate a free school type of setting where the child is left to decide what he wants to learn but he should be given the opportunity to think for himself.

Many deaf children are very rigid and this is the fault of the classroom teacher. We have helped to develop rigidity by making the child believe that there is one and only one right answer to a question. The deaf can be creative if we allow them the freedom of expressing themselves through pantomime or other means of communication.

Of course it is not necessary to be deaf in order to be an effective teacher of the deaf. That makes about as much sense as saying that you have to be black in order to teach Negroes.

In order to take advantage of creativity you must devise thinking games that are on the level of the children and be careful not to compare them with one another. In using thinking games there is no best, no loser. The results of such activities can tell you a great deal about the child's I.Q.

It's time that we stopped blaming parents for problems that we encounter in the school setting. It would be impossible for us to go around and change the environment of the children so we must accept them and their environment and do the very best we can with what we have.

A deaf community is of utmost importance. Without it, the deaf individual would have a difficult time trying to identify with anyone. A good self-concept is important to every human being and that is hard to achieve and would be difficult to develop if you did not have any opportunity to associate with people who had similar problems or handicaps.

Sign language is the natural language for the deaf.

If you are teaching something special, correct English should be used but it is not used by the ordinary deaf person. Verbal language is not logical, so why should we use it in sign language?

AN EXPERIMENT IN LATITUDINAL LEARNING—THE OPEN CLASSROOM

Rosemary Garrity, teacher, Western Pennsylvania School for the Deaf, Pittsburgh

Introduction

As a teacher of the deaf, I try to utilize effective terminology in order to facilitate a meaningful and clear understanding of a concept I may be discussing with my students. This practice makes me aware of the fact that certain terms or phrases sometimes can evoke various emotional responses. So it is with the term "open classroom". The controversy between proponents and opponents has been receiving much attention in all areas of education.

My purpose here today is to relate to you some of my personal observations, based on my experience as a teacher in a pilot project initiated in the Middle School at the Western Pennsylvania School for the Deaf.

I must agree with some critics of the "open classroom" who state that this is not a panacea, rather I feel that the open classroom philosophy is a viable alternative to the traditional approach that has been prevalent in many schools for many years.

Converting to an open classroom is not an overnight procedure. Although the change from a traditional to an open approach appeared to occur instantly for the 3 of us in the pilot team, due to the week-end elimination of a wall between two rooms, we actually had been reading extensively on the subject, as well as observing some open classrooms in action. Moreover, our team discussed everything continuously. Along with that, we attended a seminar given on the open classroom as well as some mini-workshops dealing with open education. All of this helped to prepare us for the change; nevertheless, actually implementing an open environment was very challenging.

Some basic physical changes, such as having 24 children in a double room as opposed to 9 in a single room certainly demanded a change in all of us. However, we found that we had already been applying some aspects of openness in our own classrooms prior to this physical change, and so the transition was not as radical as it seemed. I'm certain this would be true of many other teachers also. Although the first two weeks were rather hectic, in retrospect I don't think I would have changed much, because it was truly a memorable learning experience for all concerned.

Initially we set up learning centers in various parts of the room. We included the following: a Reading and Language Center, a Math and Science Center, a Social Studies Center, and a Creative Arts Center. We later separated the Reading and Language and Science and Math Centers in order to avoid congestion.

Placed in each of these areas were specific tasks to be completed by the students. These were usually related to a central theme that we were working on at that point. The theme was chosen either by the children or by us, with seasonal and current topics taken into consideration. An example was a Maple Sugar theme that was incorporated into all areas. In each center the children would work on a task relating to the theme. For example, in the Reading Center they could read stories about topics relative to the theme, in the Science Center they could be boiling the sap they had collected and in Social Studies they could be learning about sap collection from the past to the present. These tasks were made by one of the teachers responsible for a certain area. I prepared the language and reading tasks, Anne Kalyvas was responsible for the science and math tasks, and Sally Nagy supplied the social studies tasks, as well as any other activity-oriented project that may have been initiated in the other centers. Although we specialized in certain subjects, we always were free to suggest ideas in other areas and many times made tasks for the other centers. An example of a reading task might be: Go to the library, look in the card catalog and find three books about inventions. Write the titles and authors of the books.

After a large group meeting in the morning where schedules, news and plans for the day were discussed, the children began their work.

In each of the centers a check list was kept in order to see whether or not all the children were visiting each area daily and also to see if they were completing the tasks on hand. The student would complete a task, check his card and have a teacher check his work. If the teacher was not satisfied with the work or mistakes had been made, the student had to correct his task. Later, instead of specific tasks, some suggested activities or experiments replaced the check list we initiated.

The children were free to move about to the area of their choice; however, if we discovered a child rarely came to a certain center, we tried to "lead" him to that center more frequently.

Along with this we also held small group sessions for purposes of teaching specific skills and/or discussing concepts or stories we had read. The children were always encouraged to find answers through a trial and error process rather than just having a teacher feed them information.

As the year progressed we did not require that as many teacher-made tasks be completed, because we found the children were able to work more independently and with less direction than they had needed in the fall. It is amazing to witness what a child can do when his interest in a subject is aroused and he is not limited to a textbook or a workbook.

Record keeping was done in various ways, from check lists to personal data written by each of us. I found that although informal information about a child's personality and work habits was extremely helpful, some practical data such as an approximate reading level also was necessary.

In the reading corner I kept a notebook where I wrote down the lists of the books or stories that each of the children had read and discussed with me. In lieu of book reports or written worksheets, we would discuss the important ideas in the books, and I would have the children read a portion of the book orally to me. Then I would jot down whether or not I felt that the child had understood the material, as well as any vocabulary that gave the child any trouble. Some of the more advanced readers were able to do character descriptions and sub-plot analysis, while some of the less proficient simply liked to talk about their favorite parts of stories. Needless to say, the informality of the open classroom facilitated seeing individuals in this fashion.

The "openness" we tried to create did not mean that permissiveness was rampant. In the open classroom we did have a minimum number of rules, but the rules we had were kept. For example, the children were free to go to the library during the day, but no more than three could go at the same time. This was necessary due to the size of the library and the fact that there were always other scheduled library classes being held throughout the day.

The informality of the classroom was an aspect that many observers enjoyed, while others speculated that no learning could be done in such an atmosphere. Actually, there must be structure in an open classroom in order for it to be effective. One need only look around the room and see the various materials used by the children to understand that careful preparation was necessary for the learning experiences to occur. Each activity, game, task, and book was there because we felt that there were learning possibilities inherent in each of the materials. Much planning was necessary to achieve a favorable learning climate for a certain concept, as well as time spent on searching for or making the materials necessary for the individual differences in each child's interests. We also tried to have other activities, experiments, and books on hand that the children could use, that were not related to the central theme. These other materials we hoped would arouse a child's interest and invite exploration and investigation. We tried to create an atmosphere where curiosity is nurtured. Frankly, this did not occur as spontaneously as we had hoped. Often we would have to take a few children and initiate some discussion or play a game with some others in order to get some interest started in an activity. This gradually improved, once the children found that learning could really be an enjoyable experience.

We tried to create an atmosphere of acceptance and mutual respect in a learning environment that was designed to meet the needs of the students. Since we could not and did not want to "control" the learning situation via a workbook rationale, we found that our outside work load increased considerably. Although we furnished the materials that we felt were obvious aids in a learning experience, sometimes we were hard-pressed to create an interesting activity for a disinterested student.

At moments like this, I was very grateful that our team had decided from the start to discuss everything. I don't think that I can adequately convey the importance of communication in a situation like this. Luckily, if one of us had a problem, there was always someone there to give some help. We had more meetings than one could imagine. These discussions began in the morning, ran right through lunch and often we found ourselves on the phone at night. I might add that the administration was very cooperative and this, of course, made our task a lot easier.

The problem of amplification came up when our classroom became open. Previously, we had the loop system, and this could no longer be effective. Therefore it was decided that each child would wear a personal aid to allow more free flow in the classroom. This was possible without the ambient noise overriding the speech signal because the room was partially carpeted and had an acoustic tile ceiling.

Since there was so much movement in the room, books were lost, papers were misplaced and pencils somehow disappeared. After some discussion, we all decided that every day before the last bell rang, there would be a general "clean-up." I can't say that our messiness disappeared, but there was a definite improvement. When anything of major importance was broken or lost, and it had been used by the whole group, we all agreed that the entire class had to take the responsibility. This really did not occur frequently, nevertheless it was a problem that was dealt with cooperatively and the situation was an excellent learning experience for all concerned.

The children's work was on display around the room and in the halls. To some this was very important and to others it was not very meaningful. Some children enjoyed decorating the room, while others were not even aware of what was on the walls. This difference is an obvious example of the individual differences that exist in the children.

Some of the children were "contracted" daily for a short period of time so they could see exactly how they were performing on a day to day basis. Some behavior modification was used in this instance, because those who performed well as planned during the week, received rewards on Friday. Those who failed to achieve their goals were not rewarded. This worked well with some and for some it did not.

It is vital that the teacher be comfortable in the environment in which he is working. Each person has a different tolerance level and this fact must be considered when observing an open classroom. Because of this, teachers will experiment with different types of situations and, therefore, they also experience the same trial and error process that the children do. In a team teaching situation, this can be difficult if the co-workers are not honest with each other and do not discuss problems openly and freely. We never encountered any discord in our situation, and I attribute this mainly to the amount of communication that existed among us. I mention this only because I believe that it is most important that discontent does not exist in the learning environment.

Because of differences in personalities in both teacher and child and the flexibility that the open classroom fosters, I don't believe that any two open classrooms will be alike. The program that I have described to you has already changed considerably in each new classroom that has now gone "open". I think this is indicative of the flexibility the open classroom allows, and I must say that I've observed many exciting learning activities taking place in different situations.

The importance of creating an open atmosphere is readily accepted by many teachers who believe in the philosophy of experiential based learning. Other teachers who have successfully taught in the traditional method may not be as apt to jump on the bandwagon. This is as it should be. I stated before that the open classroom is not for everyone, and if teachers attempt to open classrooms for the wrong reasons, no one will benefit.

I have brought some slides of the children in the Middle School at the Western Pennsylvania School for the Deaf that will demonstrate some of the various activities that take place in an open environment.

Sample of Open Classroom "Theme"

Science Based Unit

MAPLE SUGAR THEME

I. Introduction (small group instruction or tasks):
    A. Science:
        1. Importance of sap to the tree
        2. Explanation of sap flow:
            a. Time of year this occurs
            b. Where maple trees are found
            c. Identification of maple trees
            d. Changes in temperature causing sap to expand or contract
    B. Reading and Language:
        1. Stories about Maple Sugar time
        2. Vocabulary relating to Maple Sugar
        3. Writing for information concerning Maple Sugar time
    C. Social Studies:
        1. Historical importance of Indians' discovery of sap
        2. Improvement of sap collection methods
II. Activities (individual or group):
    A. Tapping a tree on campus:
        1. Science:
            a. Children locate a maple tree on campus
            b. Children requisition needed materials and follow instructions for tapping
        2. Reading and Language:
            a. Vocabulary for tapping
            b. Sequence of events
            c. Projection of "what will happen"

        3. Social Studies:
            a. Location of trees on campus
            b. Names of tools involved
            c. Take slides and pictures of tree tapping
    B. Movie—Meyersdale Maple Sugar Festival
    C. Tasks:
        1. Science:
            a. Boiling of the sap to make syrup and candy
            b. Explanation of evaporating of large amounts of water in sap
            c. Comparison of quantity of syrup obtained and quantity of original sap
        2. Reading and Language:
            a. Story about Maple Sugar time (text and teacher and child written)
            b. Vocabulary—matching words and meanings
            c. Vocabulary scramble
            d. Reading pamphlets for information
            e. Write sequence of tree tapping activity
            f. Library work and using card catalog to find books on Maple Sugar
            g. Oral and written book reports
            h. Illustrate the activities
        3. Social Studies:
            a. Map skills:
                (1) Use Pa. map to locate Meyersdale
                (2) Direction from Pittsburgh to Meyersdale
            b. Review of History:
                (1) Teacher prepared story with questions
                (2) Illustrate Indian method of collecting sap
                (3) Sequence method improvement of collecting sap

III. Field Trip:
    A. Charter a bus
    B. Contact Meyersdale Chamber of Commerce for reservations
    C. Children write questions that they will ask on the trip

IV. Related Activities:
    A. Language:
        1. See movies and filmstrips relating to maple sugar process
        2. Leaf through magazines and newspapers for pictures
    B. Social Studies:
        1. Make a skit about the history of maple sugar
        2. Video tape the skit
        3. Illustrate the maple sugar process on a mural
        4. Take pictures and slides on the field trip
        5. Make a relief model of a maple sugar farm

V. Enrichment:
    A. Science:
        1. Collecting and boiling the sap
    B. Language and Reading:
        1. Write, talk or draw pictures about the trip
        2. Write thank you notes to people concerned with the trip
        3. Caption pictures taken on the trip
        4. Sequence the pictures taken on the trip
        5. Answer the questions the children wrote that they wanted to ask
        6. Have a Maple Sugar Festival in our room
        7. Read recipes to make pancakes and candy
    C. Math:
        1. Determine amount of mix, syrup, butter, milk and eggs needed to feed the class
        2. Follow directions on the box to determine mixing procedure, temperature and length of cooking time
        3. Measurement of ingredients
    D. Social Studies:
        1. Make arrangements for the festival in the room
        2. Invite guests and discuss manners involved

VI. Materials Used:
- A. Library file—Maple Sugar
- B. Meyersdale film of their festival
- C. Newspaper articles—Pittsburgh Press Roto Section, Michigan Outdoors
- D. Textbooks

Discussion

No real discussion other than clearing up a few comments, such as age range, reading level and reporting of progress for each child.

STRATEGIES FOR TEACHING 4- TO 8-YEAR-OLDS

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Language is the basic channel for human intellectual development and social interaction. It is also probably the most creative system possessed by man. Its obvious importance in academic accomplishment and in a broad range of human activities outside of school give it particular consideration in programs for young children. At Central Institute for the Deaf, we feel children must have many opportunities for verbal interaction with one another and with adults in order to develop language ability. Emphasis is placed on the maximum use of residual hearing to enhance the communication process which involves both comprehension and production of language.

As we plan our program at Central Institute for young children with hearing impairments, we realize that teachers cannot *cause* learning to occur. We try to establish the optimal conditions in which learning is most likely to occur. There are some important strategies which we incorporate in our program which help meet the challenge of providing this optimal learning environment.

The child learns best when there is continuous, affectionate interaction, both verbal and non-verbal, between him the learner and his teacher. It is difficult for a teacher to interact verbally with children whose responses she either doesn't understand or who do not give clear signs of what part of her message they have understood. The teacher must "tune in" to the child. She must try to determine from both non-verbal and verbal cues what it is the child wishes to say. She then matches the appropriate language to the child's thought. She must anticipate the language from the child's point of view—that is—give the child the model for what he wants to say in that situation, not what she, as an adult, would say. Back and forth verbal interactions are more likely to be prolonged if they are initiated by the child. Basing language instruction on ideas that the child originates makes the exchange more meaningful.

This interaction must take place in a classroom where there is mutual trust and respect. The teacher combines genuine friendliness, acceptance, warmth, strength, interest and concern for the children. She is sensitive to their opinions and feelings and treats these as valid.

Many opportunities should be provided for successful experiences which help develop self-confidence and a positive self-image. It is crucial that reasonable standards and expectations be set. We then try to accompany success with positive reinforcement, rather than testing the child and showing him what he cannot do. We try to avoid failure and subsequent frustration.

The young child is at his best in a one-to-one situation with his teacher, and this is also advantageous from the teacher's point of view. Although this may not be possible in most classroom situations, at least part of the day should be spent in small groups with two, three or four other children where the child feels most comfortable and therefore is most responsive.

Young children need experience in decision making. They should be given opportunities to make choices within their capabilities. These choices should also be legitimate. When asked if he wants to participate in certain activities, the child is free to elect to or not. He may be asked which color paper he prefers. He has a chance to decide which game he would like to play or which chart story he wants to review. These kinds of opportunities help children learn that they have some control over things that affect them.

The child learns best when he is bathed in language. Verbal stimulation takes place throughout the day. Language is being "fed in" during contrived experiences or incidental happenings, while attaching language to the children's ideas and thoughts, and when the teacher is rephrasing their utterances. The language is geared to the children's understanding and at the same time their existing language is being expanded. This provides them with new vocabulary and language constructions for more complex operations. This verbal interaction is related to the real world and more importantly to the *child's* real world. It might be related to science or art activities or it may be the language of games. The teacher may be giving the children language for social interaction or that which helps them control their own behavior or that of others or she might be just talking to the children. The important thing about this kind of interaction is that it is not just a monologue on the teacher's part, but there is teacher-child interaction which is based on experience and thus has meaning for the children. This rich and wide variety of language also helps provide the necessary examples of language constructions.

The child learns best when the environment provides him maximum opportunities for exploiting his natural curiosity and fostering his spirit of inquiry. Our program is oriented to daily experiences, either appropriately contrived or spontaneous, incidental happenings. We want to alert children to those events and phenomena in their own environments which are worth knowing about and which are important. Most of the experiences with the younger children are at the sensory-motor level whereas the older children are able to deal with more vicarious experiences. Whenever possible, the children are actively and physically involved in the activities. It is a "hands on" rather than "hands off" approach which provides opportunities for the learner to use as many of his senses as possible. The children are able to see, feel, listen to, put together, take apart or otherwise manipulate the materials, and often even eat the objects involved in a particular learning experience. These kinds of opportunities to explore help demonstrate the meaning of the words and thus aid in comprehension. Verbal interaction takes place during the experience and appropriate language is being processed through the children throughout the activity. The teacher is calling the children's attention to the important elements by labeling them and emphasizing their attributes. It is extremely important that the teacher is "tuned in" or "listening" to the children in order to foster their curiosity and create opportunities for expressiveness. We hope to help children acquire the basic skills of learning which will enable them to examine, analyze, observe, explore, describe and organize their own experiences.

As the child's language develops, we lead him to interpret, evaluate and integrate his activities into more complex cognitive organization. While verbal stimulation and expansion are still used by the teacher, encouraging thinking responses through questioning becomes increasingly important. Although both broad and narrow questions are used, broad questions such as, "What do you think the boy did with the bird?" are much more thought provoking , lead to greater clarity in thinking and to more complex communicative skill. Narrow questions such as "What did the boy find?" are correct answer questions which are likely to produce one-word responses. Broad questions also help the child learn that the teacher respects his thoughts rather than putting him on trial for recall of a specific fact. The right questions help enable children to interpret their experiences and to use language to organize the facts which they have learned. Now the teacher is stimulating the child to think and helping him to express these thoughts verbally.

In addition to the strategies which have been discussed, there are several others which we feel may play a role in syntactic development. As the child's language begins to develop, the teacher expands the utterances the child has initiated. His "Bobby truck" might be expanded to "Bobby pushed the truck." The adult generally retains the child's word order and adds something to it to form a complete sentence. There are many possible expansions that a teacher might provide, and the decision among these is based upon extralinguistic cues. Brown and Bellugi (1964) found that parents of hearing children expanded about 30% of their children's utterances. Slobin (1968) stated that children's imitations of their parent's expansions of their own utterances were often more advanced grammatically than their free speech. We expect the hearing impaired child to imitate the adult's expansion at whatever level he is capable. The expanded sentence provides acceptance of the child's statement. It also provides the child with a corrective model without the discouraging aspects of a direct correction. He seems to know the teacher has understood him and is interested in what he wants to say. If the teacher reads the situation correctly, then the child has a meaning in mind and the teacher provides the proper surface structure.

Another effective strategy we use is what Cazden (1965) called modeling. This is making relevant comments on what the child says rather than improving on it, as in expansion. If the child said "dog bark" the person who is expanding would probably say, "Yes, the dog is barking" whereas the person who is modeling might say, "Yes, there's a cat in the tree." Expansion does limit the conversation to the child's own grammatical elements and ideas. Modeling introduces a greater variety of grammatical elements since it is not as closely connected with what the child has just said, but both have a role in language development.

No one is sure what the role of imitation is in children's grammatical development. However, we feel that it is important for the hearing impaired child to imitate both expansions and models so he will get the kinesthetic-auditory feedback to help monitor the language learning process and thus store structural principles.

Imitating the teacher's model is an integral part of our program at Central Institute. These imitations seem to follow a fairly definite sequence. Particular emphasis is put upon the child imitating the time envelope of the teacher's model. At first the imitations resemble the jargon of the hearing child in that the correct intonation and timing are present even though the individual words may not be intelligible. Just any vocalization should not be accepted. Gradually most of the vowels and many of the visible consonants begin to appear appropriately. As this happens, the child's imitations more closely approximate the sentence patterns as more words and phrases are intelligible. At certain times the sentences are broken into smaller segments for closer approximation of the pattern, but the timing, phrase structure and intonation must keep their integrity. The sentence is always repeated in its entirety so that it can be stored as a whole thought.

We, as educators of hearing impaired children, have the responsibility of applying the strategies which we know to be effective in providing the optimal language learning environment. An environment where there is friendliness and warmth combined with affectionate verbal interaction which stresses aural/oral stimulation throughout the day with language attached to experience. One in which there is mutual trust and respect where children are motivated to learn. One in which children are able to reach high standards and expectations because of continual encouragement and positive reinforcement. We must apply what we know in order to help children acquire the competency in communication which will enable them to use language as an instrument of thought, of social control and of interaction. Only then will they be prepared to participate in and be effective members of an increasingly complex world.

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THE MEDIA SPECIALISTS PROGRAM FOR THE DEAF—1973

UNIVERSITY OF MASSACHUSETTS—SCHOOL OF EDUCATION

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For more than a century in the history of the education of the deaf in the United States, the roles and identity of personnel employed by the schools have too many times been in a state of perplexity. Through the years, teachers have had to function as speech therapists, speech therapists as teachers, teachers as audiologists, and sometimes even psychologists, while supervisory positions were gained through seniority rather than administrative know-how. In the field of deaf education, sufficient professional personnel have simply not been trained with the expertise necessary to do the "job" that is necessary. In a recent report, dated April, 1972, on a personnel survey of resource centers in schools for the deaf a questionnaire was sent to approximately 130 residential and day schools in the United States. Although only 87 responded, or 67% of the total, it does give us a representative sample of our largest and/or best-known schools. In summary of the findings we find a wide divergence in the number of personnel, both professional and paraprofessional, working in media and library science. The large schools did not necessarily have better personnel situations, though in most cases more persons were employed. Public residential schools fare better than public day schools. In the 87 schools that responded to the questionnaire, it was found that only 274 employees were engaged in library and media work.

Of these, 30% were part-time, 60% of all employees were professional, and 40% were para-professional. Of the professionals, 27% were librarians, 20% media specialists, 3% resource directors, 4% television directors, and 6% were other types of professionals. The 40% listed as para-professional employees consisted of graphic artists, photographers, repairmen, film handlers, assistants, clerks, secretaries, and other types. Librarians constituted the greatest number of resource personnel. Although 90% of these people have degrees, only 7 had library science degrees, while 21 others some study in library science. More than half of the schools reporting, of 63%, have a media specialist or a media director. However, the degrees exhibit a wide variety of majors, with approximately only 38% in media. Several of the remaining 61% who had degrees in other fields indicated that they had participated in special workshops or institutes in media, particularly at the Regional Media Centers. Only nine resource directors were recorded in the 87 schools, indicating that most schools separate library and media responsibility. Fifteen per cent of all the schools reporting have television directors or television personnel. Most of our resource persons, slightly over half, have come from the field of deaf education itself, having previously served as classroom teachers. Lastly, and probably most pertinent to our presentation today, it was found that the captioned films materials and equipment, in addition to the enormous varieties of such media available from commercial companies, have unquestionably created the need for media personnel to determine, with administrators, the placement, use and/or selection, preparation, cataloging, distribution and maintenance of media. In conclusion of this report, it was felt that schools for the deaf must recognize the need to employ professionals to fill professional positions: to hire full-time personnel where possible in positions with such great importance to the deaf as librarians and media specialists; and to increase the number of para-professionals to utilize better the skills of the professional employees. There is also a need to be alert to new and more sophisticated types of media for deaf education and to provide adequate personnel for the effective development and use of new materials and equipment. (ARPSHI, 1972)

In anticipation of this need for professional personnel, Dr. Joe Rosenstein, in 1967, then the Coordinator for Teacher Training Programs for the Deaf in the United States Office of Education, recognized the need for a media specialists program designed specifically for the area of the hearing impaired.

During a workshop, Dr. Rosenstein discussed the possibilities of such a program with Dr. Ray Wyman, present Director of the Northeast Regional Media Center for the Deaf. Dr. Wyman accepted the challenge and began planning for the development of the only media specialists program in the area of deafness at the graduate level in the nation at that time. Through the support of the U.S.O.E., Bureau of Education for the Handicapped, the program became a reality in the Fall of 1969. The program at that time was developed somewhat as a parallel to teacher training programs of the deaf. That is, the students were to take courses like those in teacher oriented programs, becoming familiar with ancillary areas such audiology and psychology, and observe classes of deaf children, but would not have the depth coverage of methods and classroom procedures. The emphasis was to be placed on curriculum implementation, social and behavioral science, communication with deaf persons, storage and retrieval systems, and administration of media services (Panko, 1969). In self-admittance to growing pains, we have found that attempting to coordinate a media specialist program on the parallel of teacher training made it very difficult for us to pursue the emphasis mentioned above. In other words, we feel that we have designed a program specifically for media specialists in the area of the hearing impaired, which is a parallel to no other program anywhere in the nation.

The following are the major objectives of the program which have been greatly expanded since 1969:

Objective One: To improve the education of deaf children through increased utilization of instructional technology by teachers.

It is now generally felt by the staff that learning about media for the sake of media to improve the education of deaf children is an obviously ineffective approach in assisting teachers to become professional personnel in the field of deaf education. In other words, before attempting to relegate media into the teaching process, teachers must be somewhat competent in instructional design, behavioral objectives, behavior modification, classroom management, and individual diagnostic or evaluation procedures. The media specialist for the deaf must therefore be knowledgeable and skilled in these areas before assisting teachers or administrators in the utilization of instructional technology.

Objective Two: To prepare students to be media specialists to work in schools for the deaf.

Specific competencies not mentioned above that would be needed by the media specialist are in the areas of: media selection, operation and maintenance; local production of visual and audio materials; curriculum revision and implementation; administration of a media center; education of the deaf; and communication with deaf people.

Objective Three: To provide a program design model to be used for the preparation of media specialists in other areas of exceptionality.

If 75% of the media specialists graduated from this program are still employed in the field of special education after 1975, and institution support continues either at federal or local level, we will then probably have an adequate program design which could expand into other areas of exceptionalities.

Objective Four: To offer students opportunities to learn about current media applications with the deaf.

The Media Specialists Program students are given an opportunity to attend local, state and national workshops whenever feasible in the area of the hearing impaired or media. Current literature, periodicals, journals, etc., in the area of media and deafness are made available.

Objective Five: To encourage students to associate with staff members of the Northeast Regional Media Center for the Deaf (NRMCD).

Members of the NRMCD staff report to the students during classes or seminar pertinent information gathered during workshops, conventions, or other assignments. Visitors are encouraged to meet with the media specialists when feasible. Whenever possible, students participate in NRMCD program activities, such as staff development, or workshops.

Objective Six: To assist graduates in job placement when possible.

In seeking employment, students not only have an opportunity to use the University's placement office, but information is sent to prospective employers on program graduates twice each academic year. Staff members from NRMCD consistently inform school communities about the Program and the availability of students.

Objective Seven: To provide information to people interested in working with the deaf.

One hundred per cent of all letters and phone calls requesting information about programs related to the hearing impaired and/or media receive a response from the director or coordinator, or are directed to other staff members.

I will elaborate on the evaluation of these objectives in another section.

Since 1969, three staff members have been added to the staff at the Northeast Regional Media Center for the Deaf and two more staff members have been added to the Media Specialists Program. With this growth in staff, we are now able to design and offer courses more specifically oriented towards the program needs. We have also dropped courses we felt were not pertinent to the needs of skills for media specialists.

Junior year

First semester:	Hours
Educational media, technology and systems	3
Media production survey	3
Principles in education of the deaf	4
Graphic art elements for the deaf	3
Seminar on adult deaf	1
Sign language and fingerspelling	3
Total	17

Second semester:	
Media in education of the deaf	3
Introduction to psychology of the exceptional child	3
Behavior modification	3
Seminar on adult deaf	1
Electives	5
Total	15

At the Junior level the following changes have been made: "Principles in Education of the Deaf" has been increased from a 2-hour to a 4-hour course. The content deals more with language development, speech, speech reading, audiology, and acoustic training. A graphic art course is now offered specifically for our students. A course titled "Seminar on Adult Deaf" is offered every semester in order to encourage students to attend deaf educational functions and professional meetings in the area of the hearing impaired. "Behavior Modification" is also now offered at the Junior level. It is felt that the above courses are sequentially offered in order to set up a foundation or introduction to the general media and the educational problems of the deaf. "Sign Language and Fingerspelling" can be taken during the first or second semester.

Senior year

First semester:	Hours
Educational television workshop	3
Total communication techniques	3
Staff development for educators of deaf	3
Seminar on adult deaf	1
Electives	4
Total	14

Second semester:	
Curriculum and media development	3
Cataloging of educational material	3
Audio visual technology	3
Seminar on adult deaf	1
Electives	5
Total	15

At the Senior level, we have added three new courses which we feel add strength to the Program. The "Staff Development for Educators of the Deaf" course deals with creating staff development in schools for the deaf relating to instructional technology and media. Students learn to identify many of the elements that influence utilization of technology and media, including the need to provide adequate resources, administrative and parental support, and so forth. Various ways to influence these factors when conducting staff development programs are examined. The evaluation of staff development activities in terms of the changes produced in teachers and students is also stressed. As a means of relating course content to school-based situations, each student participates in planning or implementing some phase of the NRMCD Staff Development Program or some other program. In the course "Curriculum and Media Development" basic curriculum theories and history in public and residential schools for the deaf are studied. The traditional, political, and economical implications of the relationship of the schools for the deaf to the development of curriculum and media are covered. A course on cataloging of educational materials is now being offered by the School of Education.

Graduate year (3-hour independent study during summer session)

	Hours
First semester:	
Administration of audiovisual services	3
Psycho-sociological aspects of deafness	3
Seminar on adult deaf	1
Electives	8
Total	15
Second semester:	
Internship	12
Research on deafness	3
Total	15

At the Graduate level, a three-hour Independent Study is taken during summer session in order to comply with the University's requirement of 33 semester hours for a Master's Degree. The new course here is "Psycho-Sociological Aspects of Deafness" which supplements the Junior course "Principles in Education of the Deaf". This course deals with the general implications of a hearing loss with deaf and hard of hearing children and adults in the areas of mental health, parent-child relationships, puberty, marriage, vocations, and psychological testing. A major change from the original course outline designed in 1969 is that of electives. Where major courses were required, we now encourage students to take courses in the following areas: psychology, speech, art, computer science, child development, statistics, and any education courses available or desired. The Media Specialists Program continually offers "Media Lab Instruction", where the student may assist in the training of other students in media technology or production, and "Classroom Instruction for the Handicapped", where a student may function as a teacher's aide in any designated school, or any one to six hour Independent Study desired by the student. During Christmas vacation we have traditionally offered a "Mini-Internship" experience, where a student may receive up to three semester hours credit for interning at a school for the deaf.

Internships have been held at the Model Secondary School for the Deaf in Washington, D.C., the Pennsylvania School for the Deaf in Philadelphia, the Crotched Mountain School for the Deaf, Greenfield, New Hampshire, New York School for the Deaf in White Plains and the New York State School for the Deaf in Rome, the New Mexico

School for the Deaf in Santa Fe, the Diamond Head School at Honolulu, Hawaii, and the American School for the Deaf at West Hartford, Connecticut.

Evaluation

The total formative evaluation plan consists of three phases. First, the Hutchinson Method of Operationalizing a Goal or Intent (Coffing, Hutchinson, Thomann, and Allen, 1971), which provides data for decisionmaking of the program coordinator. Second, an incremented competency list which permits the coordinator and staff to assess the strengths and weaknesses of each individual student or class group. Third, two evaluators interview graduate and undergraduate students in the areas of student competencies, course content, faculty teaching and advising.

The evaluation design is based on the principle, now widely accepted, that a primary purpose for evaluation is to provide data for decisionmaking (Stufflebeam, 1969), utilizing in part evaluation methodology under development (Coffing, *et al*, 1971; Fortune, 1969; Hutchinson & Benedict, 1970; Jones, 1971). We have devised a procedure which will provide the primary decision-maker with data which are relevant to his decision-making needs, when those data are needed to affect the progress of the program. In other words, we are using formative evaluation to provide maximum impact on the Media Specialists Program, rather that summative evaluation which typically provides *post hoc* information such as, "The Program was 81% successful." This evaluation plan is designed to be responsive only to the data needs of the primary decision-maker who is the Program Coordinator. This method involves a series of iterative tasks, combined with tests of completeness, designed to systematically elicit a reasonably complete set of operational statements defining a particular goal. These operational dimensions are in effect content statements in terms of the primary decision-maker's meaning for these goals. These dimensions are prioritized on the basis of importance to the decision-maker. The highest priority dimensions are selected for data gathering. These operational dimensions determine what data is to be gathered. By placing the goals and dimensions in the framework of a systems analysis for evaluation purposes, the decision-maker ascertains where, within the Media Specialists Program, the data are to be gathered. By using the procedures described above, the evaluation system operates on seven levels:

A. Assessment of impact on students in deaf schools after the media specialists have graduated;

B. Assessment of student media specialists as they progress through the Program;

C. Assessment of the success in retention of employment in special education in order to justify developing media specialists in other areas of exceptionality;

D. An assessment of professional meetings attended by Media Specialists Program students and availability of current literature;

E. An assessment of staff activities and visiting leaders in the field for the reporting of pertinent information;

F. An assessment of employment opportunities for MSP student placement, and;

G. An assessment of information inquiries about deafness and/or media.

The second phase of the evaluation is the incremented competency list. Twenty-two areas of professional functioning are to be met by the students. To assist the coordinator in testing each student on these competencies, each of the 141 skills is stated behaviorally on the list. Each student assesses himself at the end of each semester. After the self-assessment, the coordinator and students meet and discuss area competency, strengths and weaknesses. Since this competence assessment is made at the end of each semester, or incremented during the period of three years, it provides the coordinator a continual appraisal of the students' skills.

The last phase of the evaluation process deals with external assessors, a superintendent and a media services director of two separate residential schools for the deaf evaluate the Media Specialists Program for the Deaf in the areas of student competencies, course content, faculty teaching and available advising.

Previously, two advisory committees were used in assisting in the needs of the Program. One committee consisted of four professional adults, while the second committee consisted of deaf high school students from the American School for the Deaf in West Hartford, Connecticut. Both of these groups have been dropped from the Program because of government budget cuts.

Student enrollment

We are presently functioning at maximum capacity of forty-five students, fifteen at the junior, senior and graduate levels. The most enlightening thing that has happened to our student population was the addition of six deaf students last year, coming by way of the National Technical Institute for the Deaf and Gallaudet College. These students automatically function as evaluators and provide direction and insight that no committee or individual person could provide.

Northeast Regional Media Center for the Deaf

Strategically, the placement of the Media Specialists Program for the Deaf within the same walls as the Northeast Regional Media Center for the Deaf has been ideal. One needs only to examine the strategies of NRMCD to appreciate this relationship. The research and development occurring in the area of materials and equipment permits the media specialists to be totally informed on the latest equipment developed for teaching deaf children and the development of materials by the following six task groups within the Center:

A. Language Arts Transparencies—Revisions are now under way on two hundred language arts transparencies that have already been distributed to schools throughout the United States. Now that they have been evaluated, a new set of transparencies will be developed. Another set of approximately two hundred transparencies has been developed in the second task force: Career Education. These visuals are designed to assist young hearing impaired people to cope with situations they may encounter when employed, such as bonuses, company secrets, unions, profit and loss, inter-personal relationships, and so on. A third task force is that of Parent-Child Communication, which deals mostly with the communication gap between the deaf child and his hearing parents. Transparencies have been developed, many of them being open-ended, which we hope will assist to better understanding between hearing parents and their deaf children. The fourth task force deals with the problem of Drug Education. The visuals cover: (1) An overview of drugs; (2) Tobacco; (3) Alcohol; and, (4) Marijuana. Again, these are illustrated as open-ended visuals which are designed to stimulate discussion among the students. A fifth task force deals with Visual Literacy. These visuals have been designed to acquaint teachers in training with the many ways in which ideas can be put across to their students through the use of the overhead projector. The last task force deals with Sex Education. The concern of human sexuality with respect to young deaf people has continually been brought to our attention by various superintendents and guidance personnel in schools for the deaf. Literature, film strips and movies have been studied in order to develop a program suitable for use with young deaf adults.

The Northeast Regional Media Center directs a great deal of its energies toward consultation in media and deaf education throughout the entire nation as well as in Europe. Staff Development, which has been discussed somewhat previously, has now been declared one of our major priorities in the New England area. Rather than summer institutes, efforts are directed toward working directly with teachers and their students during the academic year in the areas of instructional design, diagnostic testing, developing objectives, media instruction, modes of learning for children, the use of reinforcement, and the reinforcement room. In the Spring Semester of 1972, the Center worked with the teachers at the American School for the Deaf and the Springfield Massachusetts Public School personnel in Special Education. Last Fall, the Center began work at the Baxter School for the Deaf in Maine and the Portland Maine Public Schools.

Field services, generally in the form of short workshops, are provided to all schools for the deaf in the New England area.

The Mediated Interaction Visual Response System involves the use of overhead projectors, one for each student, and one for the teacher. With this system, the teacher can correct student errors immediately, rather than delaying reinforcement for one or two days. A much more elaborate MIVR system has been installed in a specially prepared room at the Boston School for the Deaf. This new system is called the Optimum Interaction Learning Laboratory. With this system, the teacher can flash a light on the desk of any of her students to call her attention, and each student can in like manner attract the teacher. Each desk has a counter which the teacher can activate by remote control permitting each student to keep a visual record of the number of correct response. Each student can adjust the volume of either of his headphone receivers. This laboratory is now being used throughout the school day during thirty to forty-five minute periods.

One last advantage in being associated with this Center is its continual involvement with the Special Education Instructional Media Centers, the other Regional Media Centers, and the National Center on Educational Media and Materials for the Handicapped. The strategies mentioned above, along with the Center's outstanding personnel, permit the media specialists to become involved in some of the most outstanding and innovative activities in the areas of media and deaf education.

Now that we have discussed the history, the program objectives and course content, the evaluation, and the opportunities offered by the Northeast Regional Media Center for the Deaf, let us attempt to briefly define the role and the identity of the media specialist for the deaf. He must develop skills in mediaware management, local production, book and non-book materials management. He must display media leadership in presentation, demonstration, utilization, adaptation, implementation, application, promotion, consultation, evaluation, and research. Interpersonal relationships or teamwork must be developed with all school personnel, as well as parents and the general public. One needs to only glance at the content covered at any of the nine Lincoln Symposiums to appreciate the enormous, complex, and sometimes frightened but challenging area of media in the field of deaf education. It is our hope to develop within the students a foundation in the areas of media and deaf education that is not only strong enough, but flexible enough to deal with the dilemmas and successes in the field of deaf education. The University of Massachusetts School of Education accepts students into the Media Specialists Program who have successfully completed two years of college and who show potential and interest in the areas of special education and educational media. Transfer to the University may be arranged without too much difficulty. Personal interviews, biographical data, letters of recommendation, and grade point average must be submitted to the selection committee for consideration. A student's lack of experience with handicapped children or educational media does not preclude selection. Some funds for student assistantships have been made available by the United States Office of Education.

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DEVELOPMENT OF NON-TRADITIONAL EDUCATIONAL PROGRAMS

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During the 1972–1973 school year the Model Secondary School for the Deaf as well as other concerned enterprises, both commercial and non-commercial, expended much effort in the pursuit of "curriculum development." This effort was made in spite of the fact that teachers are continuously bombarded with commercial offers to provide them with the "ultimate" in curriculum research and development efforts.

Millions of dollars and untold man-hours are involved in the development, purchase, and implementation of these materials. Yet for one reason or another most of the materials fail to reach their expectation levels. Students are bored, teachers frustrated, and parents angry about the lack of progress in our schools.

This paper will illustrate efforts made in two specific MSSD curriculum development projects to overcome deficiencies in currently available materials. The two projects are: *The Human Body;* a science program designed to give instruction in basic human physiology to students whose achievement level ranged from fourth to seventh grade, and *Case Studies;* a social studies program designed to develop students' skills in basic historical processes and to develop a process of critical thinking in the examination of historical records and sources.

These two, as well as other curriculum development efforts, are being undertaken at the MSSD because of the lack of suitable commercially available materials, i.e., suitable in the sense of having direct applicability to and validity for education of deaf teenagers.

The history of commercial companies shows that they must necessarily develop materials for a broad population to assure themselves financial solvency. This argument is acceptable in terms of their own objectives of survival. In terms of dealing with specific populations, however, (defined populations of deaf students), the relatively small number of students involved may preclude commercial interest in development of curricula in this area.

In addition, all curriculum materials, commercial or otherwise, may be appropriate for the student audience because of (Weinstein and Fantini, 1970):

1. Failure to match thinking procedures to children's learning efforts.
2. The use of material that is outside or poorly related to the learner's knowledge of his physical realm of experience.
3. The use of teaching materials and methods that ignore the learner's feelings.
4. The use of teaching materials that ignore the concerns of the learner.

Note that awareness of concern implies more than awareness of student interests. Interests are usually more transitory and less anxiety-laden than concern which connotes inner uneasiness. Concerns may be positive, but they are all negative in the sense that they signify disequilibrium or incomplete satisfaction; a gap between reality and an ideal. Good curriculum should deal with ways of helping students to work toward achieving their aspirations as well as toward overcoming fears and anxieties.

Thus, the efforts of the MSSD are specifically directed to the development of curricula suitable for a specific population—deaf teenagers. The MSSD is attempting to overcome the causes of lack of applicability of currently available curriculum.

It is unfortunate but true that commercial companies are limited in this manner. The same argument may be made for many teacher-developed materials. It is possible that the key to the misuse and/or abuses of commercial materials is that they are intended to be used appropriately by the teacher. The products themselves are not intended to be used in bits and pieces.

Encouraged by the emphasis on behavioral objectives and the classification of objectives into domains, many teachers find—given limited budgets and tight time restraints—it is more profitable and faster to emphasize the development of materials whose main thrust is in the cognitive areas of learning. What usually results, however, is that emphasis is only on learning of facts. The imposition of teacher-desired concepts usually excludes the student.

Shortcomings, such as the limitation to cognitive areas, may easily be overcome by the developing teacher, if critical examination of the curricular product is made. The *Case Studies* material, for example, does not ask if people in the New Hebrides dive off of high towers with vines tied to their legs. This is a fact. What bears examination is the motivation of the people, the history—who was the first? Why do they do it? A new perspective emerges for the student when he realizes through the lesson that the behavior is not strange to these people. The student begins to have an insight into his culture with the realization that activities of his own culture may seem strange to others.

Science does not need to limit itself to the learning of facts. Ask a student to open and close his fist at the rate of about one time each second. After 30 seconds of this activity, explain that this is analogous to the action of the heart. The heart, however, does not rest but continues this activity from birth until death. A lesson such as this instills more appreciation for a student's own body than simply telling him that his heart beats continuously.

Piaget says that a child must assimilate his environment and assimilate new thought patterns into existing ones. Concepts cannot be externally imposed upon a child successfully. They are attained through experience. Most skills cannot be internalized from vicarious experiences. Simply having students observe, hear, or be told something is usually insufficient for them to be able to ingest the information, plug it into their own conceptual organization, and then do something about it (Boekel and Steele, 1972).

Piaget further postulates that the progress of the child's cognitive development is related to the growth and development of his language skills. This has direct implication for curriculum developed for deaf students. The curriculum must take into account the cognitive development level of the student. Too much currently available material is pitched for above levels appropriate to the individual student. Often too much emphasis is placed on abstract logical thinking.

The progress of the student through the developmental stages is related to his language level. The student should not be expected to deal with multi-variable problems until he is ready for them.

A Science activity should not require the generalization that chemicals affect the heart beat rate unless the student is ready for an activity of that level. By leading the student through several examples involving only a single variable, the generalization may be reached. For many deaf students, science experiments should be rewritten to include only a single variable.

In the *Case Studies* students are not required to make immediate contrasts of original/secondary, records/sources. The student is lead through a logical process dealing with the variables singly. The first activity makes a gross generalization between records and sources. "What is a record?" then "What is a source?" Feelings of confusion and frustration are greatly limited. Additional variables such as "secondary" are added singly and logically.

Curriculum materials are developed at the MSSD which directly relate to the student and to his personal realm of experience. *The Human Body* course utilizes the most available and appropriate subject, the student himself. Students are asked to use themselves as the study subject. They are asked to relate their own personal body experiences to the subject matter. The student experiences changes in himself that he may not have consciously observed previously. ("What does my tongue do?").

In the *Case Studies* a student studies his own personal records, birth certificate, school records, bank records; not those of a hypothetical student.

In both courses of study emphasis is placed on developing skills and observations that the students may apply to themselves.

Thus the education of the whole student requires that curriculum material: (1) be suitable to the student target population, (2) have direct applicability to the individual student, and (3) be at the appropriate developmental level of the student.

Good curriculum must be accompanied by good teaching skills. The best materials available will lose in effectiveness if they are not supported with appropriate teaching/implementing skills. What then constitutes a teacher?

One of the best definitions of a teacher is found in *Rasberry Exercises:* "The person who accepts you completely as you are while still being a model of a more skilled, more conscious, more aware, and more loving person. . . . Some of the things that kids search for in a teacher: He learns from us; he shows me stuff; they don't get in our way; she's there when we need her; he helps us get the stuff we need." (Rasberry and Greenway, 1972.)

A good teacher is a participant in the educational process, not a director. The teacher is at various times: teacher, partner, student, subject, counselor. These roles must be freely accepted by the teacher. In the *Case Studies* a teacher is asked to provide the student with examples of his own personal records. These might include the birth certificate or marriage certificate of the teacher.

As Anderson (1972) points out, trust and openness form the basis for an effective school experience. The student-teacher relationship becomes one of sensitivity and supportive rather than authoritarian. The teacher must thus provide and promote an environment which fosters open and valid communication.

The teacher needs to become a learning assistant helping the student work out his own educational problems. He or she is a counselor as well as an instructor. The elimination of many rules and group standards facilitates the development of this kind of relationship. The teacher needs to learn to say, "I don't know."

Several portions of both *The Human Body* and the *Case Studies* are deliberately structured so as to require the teacher to learn along with the student. Positive environmental changes in the classroom are thus brought about.

It is almost impossible to define the word "environment" even in this context, for where does the individual stop and the environment begin? In any environment, every entity affects every other one. Stimuli and reactions to those stimuli are in constant interaction, each affecting the other and each subsequently changed by the other. This concept is highly important to the teacher who works in a single room with a given group of students for a 180-day school year. A teacher close enough to touch each student must not be ignorant of these interactions. Teachers must communicate with their students.

One-to-one direct communication is written into the MSSD-developed program so that this interaction is stimulated. In *The Human Body* a student is directed to a teacher for information essential to the understanding of a concept. This situation requires the teacher develop communication with each individual student to a point that gives both the teacher and the student an awareness of any gaps in understanding.

Communication is more than stimulus-response activities. True communication needs to be subversive (in the Postman and Wiengartner sense) to the traditional goals of schooling in that communication opens up students and teachers, allowing them to see each other as human beings. Communication means that adults stop teaching-to and start learning-with.

The fact that many schools lack good communication environments is shown (Schrank, 1972) when a child grows and enters high school filled with myths, misconceptions, fears and doubts which have been placed on him. Some of the knowledge learned by these students needs to be unlearned: I am not important; my feelings cannot be trusted and should be controlled; I need permission to do things; adults usually know better; I am controlled by outside forces; I must hide my real self; learning is something that others give to me; I must become what others want me to.

Activities of *The Human Body* and the *Case Studies* are designed to overcome these deficiencies. Students are asked to make their own decisions and choices during the learning process. As the *Case Studies* series advances students are confronted with a single problem and a vast array of possible solutions. The student is allowed to proceed through his personal cognitive and affective processing to arrive at a solution.

In every classroom is a teacher who is fully capable of helping people, sometimes called students, learn and grow. Why then do classrooms remain the same? The occupational disease of teachers is deferral (Griffen, 1973). Teachers are always talking about doing something later. The "talking about" crowds out the "doing it."

It is easier and less jarring psychically to teach others about humanism, liberation, and de-alienation without immersing your own life and classes in the values. It is far easier talking about a problem of alienation, for example, than starting a de-alienating process in one's own life through definite behavior changes.

An excellent exercise to begin one's own process of overcoming is to begin by learning one new thing about each student in your classes, one thing that you did not know about that student. Then share with the student one thing he does not know about you. If you can find one thing to share, share two things, then three. You will be well on the way to developing an open environment for communication.

Good curriculum material, without an environment or attitude conducive to learning, is not the answer to educational problems. Well developed material may, however, form the nucleus for valid educational experiences.

Curriculum material should be developed in direct relation to and individualized for the learner. "Individualized" does not necessarily mean individual. Many efforts in this direction have resulted in the student learning as an isolated individual. This is a situation alien to the gregariousness of man.

Individualized instruction may be thought of as being one of four types. Each has in common the self pacing of the learner.

1. The teacher is the determiner of both the goals or objectives that the student will work for and the methods and materials the learner will use. This is appropriate only if the learner's particular personal characteristics are accounted for and that the program is written for the individual student.

2. The teacher is the determiner of the objectives/goals and allows the student to determine his own attack to the problem. Students should not be forced into this type of program as the results can be devastating to the student if he is not ready for the responsibility. This type of program can require awesome amounts of work on the part of the teachers.

3. The student determines his own objectives and the teacher determines the methods and materials necessary to reach these objectives. This type of program is often rejected by teachers who insist that students will not establish "rational" goals, even though the students may be fully capable of determining these goals.

4. The student selects his own educational goals as well as the methods and materials he will use to reach those goals. This type of program is, unfortunately, usually reserved for the highest academic achievers in the school.

Developmental emphasis for the *Case Studies* and *The Human Body* is placed on program types 1. and 2., listed above. In either case the logical starting point was to develop a brief outline of the areas which constitute a desired field of study.

A similar process may be implemented in any school with any curriculum by selecting a field of study with emphasis on the needs of the learner. Ask the questions, "Do the needs, concerns, future and current goals, and interests of the learner warrant the material?"

The MSSD Science staff analyzed student needs. Based on that analysis a priority for the students was found to be studies in the area of Biology. The next stop was to determine which parts of a total biology curriculum were desirable for the particular student population: high school aged, deaf students.

An analysis showed that one area of great need was educating the students about the functioning and maintenace of their own body. Thus it was in this direction that development proceeded. The area of subject matter and general population was determined and allowance was made for each kind of learning style that could or does exist in the population realm.

A teacher in a classroom who uses but a single text should proceed with the same type of analysis, the teacher determining, based on needs, which parts of the text are appropriate and which may not be as suitable.

At this point the developmental process proceeds along several paths. Allowance must be made for various inputs, stimuli, in modes suitable to the diverse individuals of the population.

Stimuli are information about the environment. This information shapes motor behavior and perceptual behavior. The individual must be able to use stimuli to produce changes within himself and in his external environment.

All stimuli possess properties of novelty at the onset: the time between onset and loss of interest is typically referred to by teachers as the learners "attention span."

Exposure to a restricted range of stimuli results in habituation to the stimuli and loss of capacity to maintain the organization on which other learning behavior depends. On the other hand, exposure to a wide range of stimuli at too rapid a pace ("overload"), results in poor assimilation and possible misinterpretation.

These ideas suggest that human beings need a constant flow of stimuli so that the psychological organization needed for motivation and learning may be maintained. This requires a changing sensory environment. Without this stimulation, the brain does not function in an adequate way (Waetjen, 1970).

Assuming the validity of the above, imagine what occurs in students who must daily deal with only a text and a teacher. Simultaneously one does not wish to reach a point where students are constantly overwhelmed by stimuli. A key word to remember in the development of curricular materials is "variety."

Variety for variety's sake is not a valid educational experience. If the students are inundated with variety, then the variety itself loses its novelty and students become immune to it. Variety should be controlled carefully and be appropriate to each educational objective.

The Human Body course was developed with the importance of varied stimulation in mind. Many activities were developed with accompanying alternatives. Alternatives for "tradition" stimuli—teachers talking *to* students—include:

1. *Teacher developed games.*—A series of interlocking forms were developed which are designed to show the importance of blood type and Rh factor in blood transfusions.

2. *Films.*—There are many excellent free films which may be used with almost any program. An unexpected source of films appeared when *The Human Body* development team "discovered" that many medical shools have free films they are more than willing to lend. Films may be teacher-made or student-made. As with video tape, students exhibit ample patience with any amateur effects which may appear.

3. *Video-tape.*—Instant feedback.

4. *Visitors.*—*The Human Body* team found that many people are more than willing to talk about themselves. Visitors may include: other students, teachers, parents, friends, merchants, etc. Specific sections of *The Human Body* require that visitors be obtained by the class. A section on diabetics asks that a diabetic be found who will discuss the disease and its maintenance.

Any permutation of these sensory inputs, combined with other sensory alternatives provides the variety that is psychologically needed by the students. As many varieties as possible should be constructed for each learning activity. Thus the resultant format of the material will provide for great flexibility in learning style.

Flexibility here implies a direct relationship to the learner. The learner should be permitted the choice of sensory inputs that are preferable in terms of the students' learning style. Students should be given the choice between, for example, seeing a film or reading a book in order to accomplish a given goal.

For that matter, education itself should include as much free choice as possible. Students should be permitted to select areas of content for study to the extent that they are capable of making appropriate choices for themselves. If the material preparation was done on an adequate needs assessment, then there will be no problem. If there was no needs assessment, then students will still go to classes reluctantly.

Given good curriculum, teachers with good skills, an open environment, open communication, and a student who has "learned" a given set of materials, how does the teacher evaluate that student?

Evaluation is a *learning* experience. The primary purpose of evaluation is to put us in touch with one another; faculty with faculty; faculty members with students; faculty with administration, (Dowling and Konkoy, 1973).

Evaluation reports to each student his achievement in relation to course objectives. Evaluation should be assessments of student progress. They should not be given letter grades or numerical grades. They are simply a statement of the student's progress towards reaching course objectives without regard to completion time for the achievement.

In a school where the academic program is both cognitively and affectively oriented, evaluation should provide information about students' talents, capabilities, and achievements, and should reflect the students' attitudes and interests (Dowling and Konkoy, 1973).

In order for an examination to qualify as a valid educational experience, it should do more than demand a mere recounting of facts: it should, for example, provide the student with a unique opportunity to apply what he had learned to a novel situation or problem. We are, after all, educating our students so that they will be able to deal with problems in their own lives (and their society) effectively and creatively, as they arise, day by day.

"In other words, the examination might serve quite consciously as an example of what it is an example of." (Will, 1971).

An open environment may lead to situations which could be perceived as problems by some teachers. The classroom level administration of a program of this type makes heavy demands of the teacher. The teacher no longer controls the rate of learning in the class. As each student works through the program at his own pace, the teacher finds that he is teaching as many different classes as there are students.

A student who works with a teacher for any length of time during a given class period monopolizes the teacher. This situation can at times lead to feelings of frustration on the part of other students.

The teacher will be doing multiple duty; full-time as a student, full-time as a teacher. The teacher develops the feeling that there is "not enough of me to go around." All of the drawbacks, increased teacher load, preparation time, splitting of responsibility among several students simultaneously, will be more than offset by the increases in communication with, enthusiasm in, and participation of students.

A final word needs to be said about enthusiasm. Programs such as *The Human Body* which have been researched, tested, and used in the classroom result in increased enthusiasm for learning among the students. Programs honestly based on the needs of the students will, by their very nature, be successful. Students become more eager, more demanding in attention, more open to learning. Humanistic education is a reality. The responsibility for its implementation remains with each individual teacher.

Discussion

Social and career education was discussed, and the need for more work in this area seemed apparent.

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AN EXPERIMENTAL ADMISSIONS PROGRAM

Bernard L. Greenberg, director of admissions and records, Gallaudet College, Washington, D.C.

Among the hearing impaired the problem of admission into college is a difficult one. Although the deaf have a normal distribution of innate intelligence, their sensory deprivation in almost all cases results in deficient educational development. Leaving aside the 1 or 2 percent of the deaf population who function normally from the educational point of view, applicants to Gallaudet have a degree of deficiency averaging about 5 to 6 years in verbal areas. The range of deficit, however, extends downward to functional illiteracy—performance on verbal tasks at the first or second grade level of competence.

One solution, of course, would be open admissions. The main problem with this approach in such a situation, assuming adequate resources to offer higher education to all who wish to undertake it, is that a number of individuals will be enticed thereby into wasting a year of their lives in a fruitless pursuit of unrealistic educational objectives. To some extent, insightful counseling over a protracted period—not merely when a decision point is on the horizon—would mitigate this problem, but the resources for a major counseling effort are as limited as those for educational reconstruction. Some sort of screening for academic competence would seem to be required. It is not particularly difficult to determine which applicants are wholly incapable of advanced study; the problem lies in distinguishing among those in the marginal area of skill.

To do this, as I have described in a previous paper,[1] Gallaudet uses a multi-faceted test battery covering many different academic skills in a variety of formats in order to give students the maximum opportunity to demonstrate that they have some academic strengths. This battery has been found in longitudinal studies to have excellent predictive validity both for attrition and grade-point average. However, we are unable to admit as having a reasonable chance for success, more than some 5 to 10 percent of the hearing impaired population. We are painfully aware of the grave discrepancy between the deaf and the hearing populations in this respect—almost half of the latter attend college.

In an attempt to whittle away at this gap, several years ago we began to consider ways to admit sub-marginal applicants. We already knew that to do so by merely lowering skill standards would be futile, since validation studies showed conclusively that we could not expect any reasonable proportion of the students with lower competence levels to be able to handle our curriculum. Yet we also knew that there were occasional individual exceptions. Something in these cases seemed to be compensating for their extreme academic deficiencies. Discussions with instructors suggested that the most important factor might be motivation (just as poor motivation accounted for incorrect predictions of academic success).

Accordingly, in 1969 we inaugurated an experimental program in which applicants who were sub-marginal academically were admitted to a special summer program, if they had received high ratings from their secondary schools on motivation. We did not, of course, choose these from among the lowest ability stratum; those chosen represented a degree of academic retardation of from 5 to 7 years, compared to the average 3 to 4 years deficiency of those accepted under our normal standards. The experimental group was, in all cases, academically weaker than those who would normally be accepted for admission to our remedial preparatory program.

The condition for admission of this special group was that they would attend an organized remedial summer session, at the end of which they would be retested in the areas of their greatest deficiencies. If on retesting they showed improvement, and if reports from their summer instructors were favorable, these students were permitted to join the regular preparatory program in the fall. You will note that this procedure contains two measures of motivation in addition to the original rating. First, the decision whether or not to enroll under the conditions imposed in itself constitutes a severe test of a student's determination. To this was added instructors' assessments of the effort the student was willing to expend during the summer session.

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[1] The Measurement of College Potential in the Hearing Handicapped, June 1971, American Annals of the Deaf.

Although normally we prefer to wait until after at least two classes have graduated before reporting on any experimental approach, in this case we are making a preliminary report on the 4-year period of the experiment, in the hope that our experience to date may be of interest to others faced with predicting academic performance among academically poorly prepared students.

In 1969 we offered provisional admission to a trial group of 24 students, half of whom enrolled for the summer session. Over the next three years a total of 124 applicants were offered provisional admission and 71 (57 percent) accepted our invitation. Ninety percent of the four provisional groups were permitted to enroll in the regular preparatory class in the fall.

The groups invited to participate and those in the group who entered the preparatory class were, except for their poorer academic skills and their uniformly higher motivation, similar in most respects to the typical student admitted to Gallaudet. They all had profound deafness of early onset; they ranged between 18 and 20 years of age; and they came from both residential and day programs. Equal numbers of males and females enrolled (although there were significantly more males in the original group to whom the program was offered).

Two-thirds of those enrolling in the preparatory class are still enrolled at Gallaudet and 44 percent of the original provisional group have completed four years successfully. Of the 1970 group, 48 percent remain; 67 percent of the 1971 class; and 83 percent of the 1972 group. These survival figures are not strikingly inferior to those of students admitted to the Preparatory class under normal standards, where 48 percent remain after 4 years, 61 percent after 3 years, 70 percent after 2 years and 75 percent after 1 year.

Another index of academic success is grade-point average. Since the deprivation of the deaf tends to be most severe in the language area, we have computed GPA separately for mathematics and for language-intensive courses. As would be expected, there are few academic stars in the provisional group. For those who were permitted to enroll in the regular preparatory class the cumulative average GPA for language-intensive courses is C− ; 15 percent have an average of B or better, while 31 percent have a D average or poorer. The average GPA for mathematic courses is D+. Only 4 percent have a B average or better in mathematics courses and fully 60 percent have D's or F's. This suggests that motivation has less effect on math performance than on performance in the humanities and social sciences, and confirms earlier studies [2] of the ability of the motivation index to predict grade-point averages among the total Gallaudet student population. A reasonable inference from this might be that academically marginal students who plan to major in math or the physical sciences are less likely to be able to compensate for their deficiencies by making special efforts than are students majoring in other fields. If so, it would follow that prospective math/science majors with grave academic deficits should be admitted more conservatively or conversely, that aggressive counseling on choice of major might be able to salvage a number of students who otherwise would not be able to continue till graduation.

While it is true that the provisional students do not rank high in GPA compared to the *total* group of students who meet our normal admission requirements, their academic success is comparable with that of the lowest group who meet these requirements. This latter group is superior to the provisionals in academic skills but is not screened on motivation. The success of the provisional admission program can perhaps best be measured by the fact that the rate of graduation for this group based only on academic achievement at admission would be expected to be about 1 in 25; whereas the projected rate of graduation based on grades and attrition rates to date is 9 in 25. Adding the motivation variable to the screening process for submarginal candidates for admission thus increases the likelihood of success with Gallaudet's curriculum almost ten-fold.

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[2] The Measurement of College Potential in the Hearing Handicapped, June 1971. American Annals of the Deaf.

CAPITALIZING THE I IN DIAGNOSTICS

Margaret L. Haines, diagnostic teacher, Florida School for the Deaf and the Blind, St. Augustine

(Note.—This paper was prepared in the form of a narration to accompany a movie.)

There are many facets, factions and levels in the area of diagnostic testing and diagnostic teaching. May I offer, for your consideration, the following as a goal for educators of deaf children: "To enable a child to utilize his innate intelligence with the least possible physical impediment." Since deaf children learn visually, *vision*, with all its ramifications, (and not to be confused with eyesight), is our primary consideration. Putting first things first requires that we know where a child *is* before we can plan for his particular needs. Today we shall see one approach to the subject.

In the movie, from the word Diagnostics, we remove, significantly, the word agnostic which leaves Di s. The D and s are set aside for future use and the i grows into a capital I, which I ask you to say aloud. In so doing you named the best diagnostician for your class. Continuous everyday observations of a child's behavior in various activities and in various but familiar surroundings are much more meaningful than a "once-over" in a strange place with a stranger. The teacher can spot the child who needs special help, observe him and combine her findings with those of others who are involved in the search for a reason for the difficulty.

The manner in which the movie was introduced sets the tenor of our approach to Diagnostics. You will not be exposed to a lot of (borrowing from Getman) "terminological echolalia"; instead you are invited to follow a child as he performs a series of tasks which have been compiled from the works of experts. As time permits, the WHY: of the task is offered. Obviously, each child will not need to perform at each of the levels shown in the movie. The test tries for the desired end-result; then (in some areas) there is presented sequentially lowered levels of the task which are used until the child's level of development is found, aiming to "close-out" with success.

If your school has the services of a psychologist who can and does *interpret* her findings to you (rather than merely present the final I.Q. score) your battle is half-won. Diagnostic testing does not mean that one is looking for Learning Disabilities *only*. Abilities are expected and noted as well. These strengths can be used as ladders for the weaknesses to begin climbing upon. Sometimes these psychological services are hard to come by. That fact plus the need for a "highly organized, imaginative, child-centered program of diagnostic teaching" (Barry by McCarthy) are the bases of the hope that you will find some of "What-you've-been-looking-for" in today's approach.

In working with young children it is imperative that we familiarize ourselves with the findings of Child Development specialists. We must know what to expect of a child and, perhaps more importantly, what *not* to expect. If your teacher preparation program provided you adequately in this area, consider yourself fortunate. Articles well worth reading and pondering upon are found in the Proceedings of the 1971 Convention, Little Rock. Jane DeWeerd, Education Program Specialist, Early Childhood Education for the Handicapped, spoke of the shortage of personnel whose background provided them with "an understanding of the special needs of handicapped children and the skills to meet those needs *coupled with* an operating understanding of child development". She hit upon a vulnerable spot when she said—"it will be incumbent upon us to see that our kindergarten programs are not watered-down first grade programs and that programs for 2, 3, and 4-year olds are not watered-down versions of those kindergarten programs". She points out that while the handicapped children are *within* these programs their non-handicapped peers are busily engaged in activities appropriate for their development levels such as exploration opportunities, guided active experiences, large muscle movement and purposeful play.

Frank Powell and Virginia Herzog offered enlightening information concerning their work at the Callier Hearing and Speech Center, Dallas. A great deal of research has been compiled and acted upon. Ms. Herzog states, "After reviewing curricula from other schools, it appears that material written for beginning 6-year-old deaf children has been lowered with the expectations of having 3, 4 and 5-year-old children fit that mold." She states, further, that, "Our 5 and 6-year-olds who have been in school two and three years are functioning ahead or at age level in non-verbal tasks and have a greater visual attention span. They display better adjusted behavior patterns, but they do show some *visual motor problems*." My question is, "Are these visual motor problems just a happenstance indigenous to those children at Callier's?"

Now that we have set the stage, let us review a few of the more familiar terms which are used concerning basic learning-readiness skills. First and foremost, there is Perception; then Form Perception, Form Discrimination, Body Concept or Awareness, Laterality, Directionality, Spatial Organization, Temporal Organization, Figure-Ground Discrimination, Sequence Perception, Motor (Gross and Fine) Skills, Hand-eye and Eye-hand Coordination (sometimes called Visual-Motor Integration) and Tactile (or tactual) Discrimination. Too, there are whole-to-parts relationships and vice versa, Constancy, Association and Disassociation and the term Generalization, which is given a great deal of thought nowadays. With so many wires to be properly placed in the Switchboard of Learning, isn't it a wonder that there are not even more wrong numbers?

After lengthy review of the literature in a search for the most helpful definitions of these terms, I was struck by the fact that the most concise, yet meaningful descriptions I had read were put together in the 1972 catalog called "Developmental Programs for Early Learning", put out by Teaching Resources—An Educational Service of the New York Times (and no wonder, when you check their advisory board!). The Index enables one to gain further insight into these concepts by simply matching the materials and their use with the different headings of curriculum areas and specific skills.

While it is probably true that deaf children have had the opportunity to use more developmental materials and exercises than have their hearing peers, it is sometimes easy because of the pressure of "The Curriculum" to neglect and/or avoid spending enough time in this area. When discussing these needs with a well-known retired teacher of the deaf recently, she remarked, "Whatever happened to our Sense Training Programs?" (If you recognize that term, it dates you.)

In the movie you will see materials from Wretha Petersen's Academic Assessment, Kit 1. It is very helpful to have these materials, her notes on what to look for and how to evaluate your findings at your fingertips. The bibliography reads like a Who's Who of educational trouble-shooters. (Kit 2 with remedial aids is due out soon.) Also, you will see some of the books listed on your list, "Sources of Information." (The other listed books are equally helpful.) Frequent references will be made to the book "Purdue Perceptual-Motor Survey", which will be referred to as PPMS hereafter.

In the movie we see a "simulated" intake. The 6-year-old children, who have been in our program since September, were filmed because it would not have been fair to a child who was being tested for admittance to our school to have the added "newness" of a photographer.

Enough prologue.

You see the child greeted by the use of one of the best tools for testing—a large ball. He must respond to it. Does he catch it? How? Or does he consciously avoid the task? Does he bounce (not throw) it back?

Next we explore the area of body concept or awareness as the child views himself in a full-length mirror and identifies his sex by choosing the boy puzzle (the girl puzzle stands beside it). This almost life-size puzzle is disassembled to be reassembled by the child. This body-awareness is the beginning of the concept of *laterality*, i.e., a sense of two-sidedness; a concept of "rightness, leftness, upness, downness", which leads to *directionality*, which is the ability to discriminate these concepts in external space, that is, space beyond the body.

Next a small body figure with movable arms is brought to the child's attention. This figure, which is placed on the bulletin board under the patterns of the P.P.M.S. for the "Imitation of Movement" test, is manipulated to convey to the child the idea of what he will be asked to do, since communication is usually nil. This test is designed to measure neuromuscular control and the ability to translate visual clues into motor movement. We see unilateral movements, in which only one arm is required to move; bilateral movements, in which both arms move in the same direction and contralateral (sometimes called integrated) movement in which one arm moves one way and the other moves another way. Generalization is brought into the picture as the child changes sets and assembles a small body puzzle at the desk. He is asked to identify his own body parts as the puzzle parts are held up or pointed to. Note that both eyes are identified. This is probably a good place to point out that whether a child uses the more immature mirror response (as would be expected at this age) or the more mature parallel response to the model is not of great concern; but should he switch from one response to the other, that child may not have an established laterality. Note that the child in the movie switched responses.

Next, we usually go into the Visual Tests.

One hundred years ago a Mr. Snellen developed an eye test for determining acuity of eye sight at the distance of 20 feet. First one eye is tested, then the other and the test is very reliable for giving that information. But what about the near point vision used for reading and information about how the two eyes work together? Imagine how amazed Mr. Snellen would be to learn that his crude (compared with what is available today) instrument is still in use and its limited results passively accepted as "all we need to know" by the same people who put men on the moon and returned them to earth. Why are we content to know nothing about vision (again, not to be confused with eyesight)? We learn and pass on such information as (a.) We insert nothing smaller than our elbows into our ears and (b.) If we eat too much candy we'll get the stomachache *and* cavities; but what do we know about vision? Did you learn anything in your preparatory days about it? Should vision not be considered as important as, say, cavities?

The Titmus Vision Tester has been found to be remarkably adaptive with deaf children. There is training (conditioning) material for preschool children; acuity in each eye separately and, more importantly, binocularly, is measured at Far point. The muscle balance test is adaptive to non-verbal directions and answers. After the child learns to read capital letters (this I'd like to see changed to small letters) more accurate and sophisticated results can be ascertained at both Far and Near point. The machine measures the fields of vision, both vertical and horizontal phorias, and the results indicate when professional help is needed.

We see in the film the child being asked to write his name on the Record Sheet. Here a number of observations can be made. Can he follow the directions, "Write your name" given through any form of communication, reading or association? If not, can he choose his name when presented a choice of names from which to recognize his? Can he write it independently or does he need to copy it? Does he show experience with handling the pencil? How about his fine motor control? Which hand does he use? Does he use too much or too little pressure on the pencil? Does he use cursive or manuscript writing? Are there reversals? Inversions? Does he use all capital letters (which he probably learned at home)? If he has been in a program previously, is his performance what you would expect?

Stress, arch enemy of learning, is sometimes indicated by the amount of pressure used. Self-worth or lack of it can be noted also.

As the child in the movie proceeds with the testing, we see him respond quite well with the testing of each eye separately while the other is occluded. When the test is changed and binocular vision (using both eyes together) becomes the task, we see quite a change in his behavior. There is much head turning in an effort to see it all with the left eye and finally the task is avoided. This child needs professional help. Amblyopia—the "lazy eye"—which is so prevalent, may be indicated by this behavior.

Which is the dominant eye? One simple test is the use of a Kaleidoscope. Note that it is not handed to the child. Should he need to be shown how to use the toy, we avoid having him see us use either eye so that he won't imitate. He is given the opportunity to use the toy more than once and, hopefully, he will use the same eye. If he doesn't, a lack of established eye-dominance is suspected and that is an area of concern. We note that the child in the movie uses his left eye with this task.

Here we see the child's visual motility (ability to move his eyes) being checked. He is visually pursuing a moving target—in this case a colorful Ladybug thumbtack stuck into a pencil eraser. Horizontal, vertical and diagonal movements are used. You will note help is needed to hold the child's head still so that only the eyes move. Each eye, while the other is occluded, then binocular pursuit is checked. Again we see the child in the movie avoiding the task. He is unable to maintain eye-contact. (Note that the target is always moved in an arc in order that the child can avoid changing to near point focus as the target passes in front of him.) There are various deviations to look for. Dorothy Simpson's "Learning to Learn" and P.P.M.S. both have excellent help in this area, too. Do the eyes move smoothly or is there jerkiness? Does he "lose" the target? Do the eyes work well together? Do the eyes "pop up" about midway of the body? Do you notice signs of strain or stress? Think of how much more strain and visual effort will be required when the child is required to follow a line of print, which is what it's all about. The ultimate aim is that the child be able to have his eyes travel over a line of print and convey to him the message without undue cognitive processing such as:

> Is that re*b* or re*d* or r*ee*d? s*oo*n or s*o*n? MOM or WOW?
>
> Does that say, "The boy *saw* a nut?" or "The boy *was* a nut?" or maybe it's "The *dog* was a ———;" ——— is that thing (n) up or down? or
>
> "Why am I always losing my place right in the middle of the sentence? and/or skipping a line? I do wish Teacher would let me point so I could keep my place." And on to: "Oh to Heck with it! I've got to find a way out of this job. I do have to go to the bathroom, don't I?"

Following the vision check, we seek to find out something about the child's visual perception; how he sees geometric forms. We combine the test from P.P.M.S. and the Winter Haven test, which is an adaptation and extension of the former. The forms, a circle, a cross, a triangle, a square, a bisected oblong (British Flag), a horizontal diamond and a vertical diamond are shown to the child, one at a time, to be copied. Note that the patterns are held upright; if they were to be placed down on a flat surface, the perspective would be changed (so why did we "progress" to flat, shiny desks from the old slanted ones)? Remember to consider the age of the child and his expected level of development.

The ability to copy these forms is recognized to be a good predictor of reading readiness and first grade achievement. Kephart, in the Purdue Perceptual Motor Survey, Supthin in her Winter Haven Book, and others offer detailed rating considerations, much too lengthy to go into here, but important for you to know. The ability to see and reproduce the form as a whole rather than segmented into a one-line-at-a-time drawing; the spatial organization; directionally (dog-ears on diamonds), figure-ground relationships, the need to rotate paper indicating ability to work in horizontal or vertical planes are among the things noted.

Then the child is handed a sheet of paper on which is drawn a part of each of the geometric forms. This Incomplete Forms part of the Winter Haven Perceptual Testing has been observed to require more ability than the original copying. The child must see and integrate a part into a whole form. The directions in the book are not followed because they required too much communication, but the results of the procedures used here seem valid. A different point of vision is used in this part, i.e., the models test ability to see farther away than the original test. Later in the film we will see the test used as a delayed visual-recall exercise when the child is asked to write the forms on the board from memory.

Next we see the child sorting colored geometric forms. This task is helpful in estimating the child's ability to "see" the forms even if he can't draw them. The added color cue is considered. Then the forms cue is removed and color perception alone is the task as he sorts colored cubes. In turn, ability to read the color names and then to write them is checked, since many children have been exposed to this in earlier programs. Again, this is a good place to note reversals, inversions, lack of temporal relationships, etc. How many times have you seen re*b*, bl*n*e, and with older children re*D*, *B*lue? When older children use capitals inappropriately, it could be because capital D's and B's, etc., are easier to differentiate.

Further testing includes Montessori boards for combined size and depth perception and the harder depth (alone) perception; identifying objects tactilely, using the old but viable "What's in the bag?" technique; and working a simple puzzle. Coloring the outside of the puzzle a strong color aids the eyes to find and stay within that area.

Experience with numbers is looked into as the child matches number of cubes with domino patterns; then the numerals are added and lastly the printed word is added. If applicable, ability to write the numerals is checked. This often reveals reversals, inversions, rotations—lack of directionality. Ability to perform all these tasks does not always indicate true number concept, an important fact that should not be overlooked.

Here we see Wretha Peterson's test for figure-ground perception. These interlocked squares on a pegboard, sometimes called formboards which sounds less like "play", look so simple and easy to us, but let us experience something of how difficult this task might be for some children. Here we see something which we have all seen many, many times. What is it? We can turn it all around. Our eyesight is O.K., we can see shades of gray, black and white, but do we see a meaningful form? Now we will have help as the foreground (of a form) is pulled from the background by drawing over the form, and we easily recognize a cow. Take the drawing away and we still recognize the cow without any difficulty. This is the difference between *sight* and *vision.* We have experienced visual perception. We *saw* by means of our acuity the shades of color, but without meaning; we *perceived* when we distinguished between foreground and background and the picture became *meaningful.* This same ability when refined to a more sophisticated and highly complex level is called *Reading* and without this basic ability of figure-ground perception, a printed word (figure) on a page of paper (background) can look to a child just as meaningful as those shades of gray did to us at first glance.

Just as the act of walking is *learned*, so is the act of vision (seeing with meaning) *learned.* The muscles used in walking will perform when they are ready. Then the child will walk. Until then, he tries, fails and sits down. That is perfectly acceptable. But what about vision? A child finds himself in a schoolroom one day. He is expected to maintain near point vision on school tasks. He tries, fails and avoids the task. Is that acceptable? No, he is immature, stupid, lazy, doesn't try, hyperactive—you name it. Another troubled child is able, perhaps, to see the task, but how much undue effort and stress is involved? Could this be the birthplace of many "hate school syndromes"?

As our child works on the interlocked squares in the movie, we view some sequence patterns on formboards which are recommended to help bring about this figure-ground perception. First is the vertical line; then the horizontal line; alternating long and short lines; the closed box (square); the open box (with the top introducing the diagonal line); the stairs; the diamonds and finally the interlocking squares.

The child can change sets by reproducing the patterns on the board. Then patterns can be reproduced on the formboard using a model drawn on paper as a guide. Here we see the matching of the look alike elements p, b, d, f, t, was, saw, 9, 6. Think also of a, D; W, M; u, n; A, H; y, h. This task is important and informative because reversals and inversions appear here. This is where a lack of an innate awareness of rightness and leftness, i.e., *laterality*, shows up. Here, too, directionality—spatial projection of rightness, leftness, upness, downness are needed for the correct matching. Think of the body with a vertical midline, the zero point of the gravitational axis. If a child is not aware of his body having two sides, left and right, he can't see which side of the stick the ball goes on to make a *b* or a *d*. We have, also, a horizontal midline and lack of this awareness can result in difficulty in seeing the difference in *b* and *p*. Is the stick above or below the midline? Think of the spatial organization of your body thus †. Add balls and sticks to make *b* *d* *p* *g;* put them all together and we have . This helps us see why it is hard for some children to differentiate between these letters and why awareness of "leftness, rightness, upness, downness" is all important.

The cutting out seen here shows the child's ability to use contralaterality—the ability to do one thing with one side of the body and another with the other side. A simple outline form is used; note the heavy double lines. It is much easier to cut between the two lines than to follow a single one. Hand dominance, fine-motor development, and eye-hand coordination are among the things noted. Can the child unscrew a jar lid and put it back on? How does he walk up and down stairs?

The next task seen is from the Petersen Kit; simple noun pictures, boy, girl, ball, dog, house, are matched, then the written form is added to check the child's ability to read them.

The child now identifies ordinary things in a schoolroom from actual photographs. If a child, regardless of age, does not perform at a given level, *more* practice on *more* exercises at that same level is not the answer. We must find his level and start a little below there in order to realize the old truism that "Nothing succeeds like Success" and to gain impetus for tackling the next level. With older children, the trick is finding material appropriate for his interest level while incorporating the needed developmental sequences. I have found the Project LIFE material an excellent supplementary aid in meeting this need.

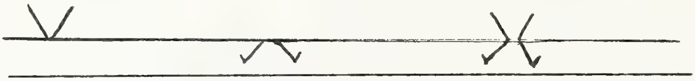
Now we see the all important Gross Motor Development Tests. Here, often, can be found the reason for success or failure in the preceding tasks, because normal development, including vision, is a series of skills built one upon another; further development at any given stage depends upon the foundation laid heretofore, and again, we must return to where the child *is*, proceed on the normal track until he catches up with himself.

First, the child is asked to jump. (There are children who can't get both feet off the floor simultaneously.) This test seems to be a good indicator of true number concept, also, as the child reacts to requests to jump a given number of times.

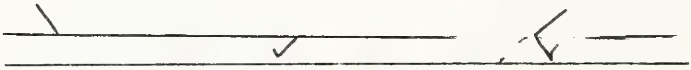
Then the child is asked to hop. He usually must have a pattern to imitate. In order not to influence his choice of foot, it is helpful to hop across his line of vision rather than in front of him. Which foot does he favor? Can he hop on the other one? If not, lack of established sidedness (laterality) is suspected. (How is a *d* different from a *b*?) And unless a child can handle each side of his body independently of the other side and *then* integrate his two sides, i.e., have each side work with and help the other, he cannot *really* skip. He merely hops on each foot or hops on the foot that is able to hop and "walks" the other one or avoids the task, as we see in the movie.

If a child can't meet the gross motor tasks of coordination and integration required in skipping, is it logical to expect his eyes to *share* the task involving the subtle muscular maneuvering and fusing required in moving across and down a printed page?

Now the child is asked to lie down on the floor in order to relieve him of the task of handling his weight as we test his ability to differentiate one part of the body from the other *and* without undue cognitive processing. This is a true test of the concept of "rightness, leftness, upness and downness" as the child is asked to respond to requests for using the normal stages of development: (a.) the crib *bilaterality*, then (b.) *unilaterality* (one side at a time) then (crossing the midline of gravity) (c.) integrated laterality. The child must be able to know where he *is* in space before he knows where in space things beyond his body are. We see the following patterns as the child goes through the test:

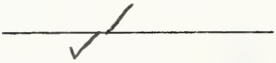


arms up (a) legs up (a) arms and legs (a)



one arm up (b) one leg up (b) arm and leg on one side then the other side (b)

and finally



(c) arm of one side and leg of other side and vice versa.

Directions for these activities are given by visual clues, pointing to the arm(s), leg(s) to be used and by tactile clues, touching the involved limbs. We hope for the child to be able, after two or three attempts, to use *only* the indicated body parts and not have the action "overflow" into the other arm or leg.

And on to the Walking Beam where balance and again laterality and directionality are noted.

Cooperation with a good Physical Education program can be most advantageous in this area of Gross-Motor Development. Jay Yanoff, Temple University, thinks highly of a properly conducted trampoline training and swimming program. Old mended, inflated truck innertubes are recommended as excellent playground equipment. A word of warning that may save you considerable indecision: Watch for "Splinter Skills." A child may practice and become quite skilled at some specific task without having mastered the underlying foundations; he cannot, however, transfer that learning to another task; he has developed a "splinter skill."

It appears that the recognized degree of a Learning Disability equates with the ability to compensate. While we seem to concern ourselves mostly with those who don't have this ability, perhaps we should consider those who do have it, also. We see and recognize a condition that could hamper a child, but hear, "But he *is* accomplishing! He *can* do the work." We all know people who have succeeded in obtaining a good education despite visual handicaps. A member of our staff comes to mind. As a child she had the operation to straighten her eyes. She is nearsighted in one and farsighted in the other. As a young girl she started a visual training program, but getting back and forth to the doctor's office was too much of a hassle, so she dropped out. Anyway, she is now not only a psychologist, but a math major as well! How does she function? She compensates. One eye simply occludes when it gets in the way, causing double vision. But consider the added energy and effort she has had to expend. Who knows, with her I.Q., she might have been another Einstein?

Isn't it logical to surmise that if we can spot and correct the inferior tools of learning early, before time for the child to *learn to read*, that when it is time to *read to learn*, much of the third grade trauma will be avoided? Our job is to become aware of the tremendous part vision (i.e., *how* a child sees) plays in the learning process and to not take for granted that each child's vision development has been normal *after* ascertaining what normal vision is for the child's age and experience.

It is getting late. Signs of stress which so easily become distress are appearing, so on to the end of the movie.

Here we see the D S which were kept for later use. We take the "literary privilege" of switching their positions to

S D

which become (in the movie)

See and Do

See the child's needs—awareness is the keynote—*and Do* something about it.

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CRITICAL VARIABLES IN PROGRAMMING FOR THE DEAF-BLIND CHILD

Edwin K. Hammer, Ph. D., project director (Regional Center for Deaf-Blind Children in Arkansas, Louisiana, Oklahoma, and Texas), Callier Hearing and Speech Center, Dallas, Texas

In developing educational services for deaf-blind children, it seems important to attempt to define those critical variables which are necessary to effectively teach these multihandicapped children. For the past five years, the Callier Hearing and Speech Center in Dallas has been attempting to do some of the delineation of the problems of educating deaf-blind children through a grant from the Bureau for the Education of the Handicapped, Washington, D.C. This grant established educational services for deaf-blind children in Arkansas, Louisiana, Oklahoma, and Texas in three basic areas: services to professionals, services to parents, and services to children.

Certain data were available at the beginning of the development of services. There was a known population of deaf-blind children in the region (to date, there have been 684 referrals to the regional center). There were a few deaf-blind children in educational programs (21 children from the four states were being sent out of state for educational services in 1969). There were no ongoing programs for deaf-blind children in the region five years ago. Parents were essentially left to their own coping strengths to find services for their child or to use available services for their child.

Other information was needed to outline the development of services. A review of the situation indicated that there were certain critical variables which must be investigated if further programming was to succeed. The first critical variable was getting the child into a program. It was decided that if the children could be placed in diagnostic classrooms where their disabilities and abilities could be observed, that more meaningful educational services might evolve from diagnostic procedures. This decision allowed programs to accept children without extensive re-evaluations of the deafness and blindness. Later these re-evaluations could be made a part of further placement planning or referral to more appropriate placements. However, at that time, it was felt that routine evaluation procedures did not add to the existing knowledge concerning the child. Thus the first effort was to have the child placed in a program where diagnostic teaching could be combined with observations of the levels of function of the child.

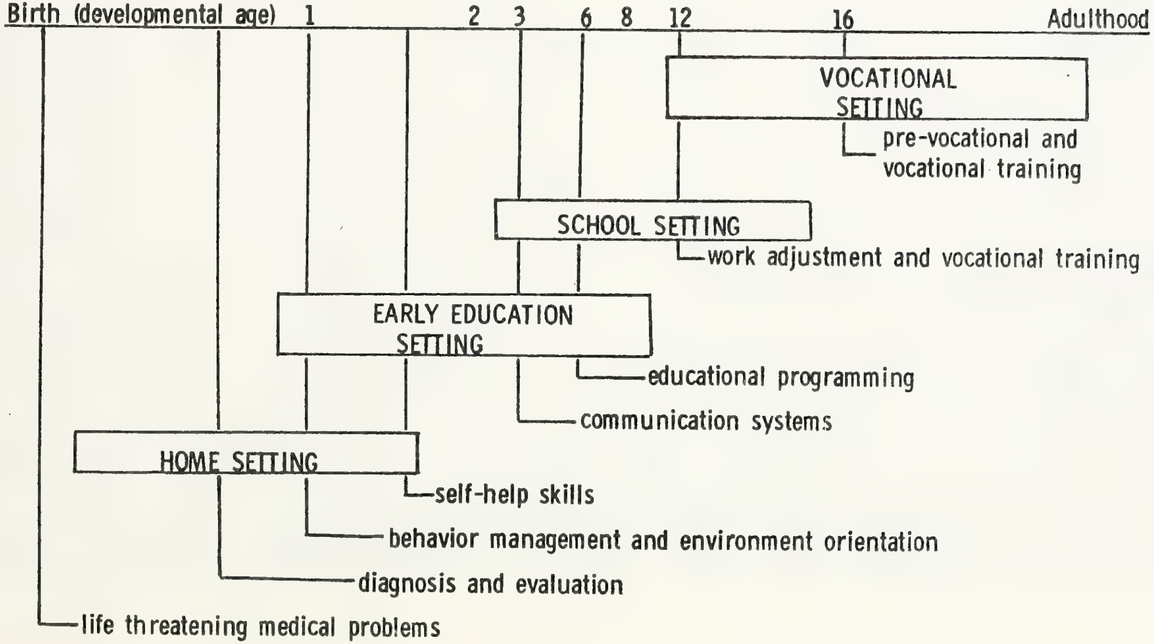
A second critical variable in programming for deaf-blind children seems to be what the child could do. Reports and referrals seemed to be filled with data about what the child could *not* do with an accompanying list of labels and negative behaviors. Two factors emerged in relation to this variable: documentation and letting the child take the teacher where the child would go. Most of these children were not toilet trained. The majority of them were still bottle fed. Few had any means of communication. Often, it seemed, these children were so inwardly turned that their life consisted of someone else taking responsibility for management of the environment and the child seemed to be caught in a cyclical world of self-stimulatory behavior. The existing body of knowledge concerning deaf-blind children seemed to be geared toward the “higher” level child, which generally meant a child who was academically oriented and whose basic need was for more formal learning. If programs were to find out what a child could do, it became paramount that some method of keeping records of progress be available for teachers and parents to understand how the child progressed, and perhaps, why the child progressed. Thus, many different approaches were outlined (Hammer, 1971), to attempt to keep comprehensive records of how the child progressed in the classroom and at home. It also seemed important to provide the children with opportunities to develop behaviors other than those initially observed. It is one thing to shape a behavior, either increasing or decreasing its occurrence. It is quite another thing to provide a learning atmosphere for the child to develop alternate behaviors which seem as meaningful to the child as does the "negative" behavior. To counter the negative behaviors, situations were set up in the classroom to help the child turn his attention from self-stimulatory behavior to seeking behaviors. This is an oversimplification of the approach but, in essence, it was found that when the environment could be coped with by the child, the child found reason to relate more to this environment in ways other than through self-stimulation. The concept is basically taken from child development and specifically from early childhood education which centers on allowing the child the opportunity to organize his world without adult management. The documentation of progress seems to indicate that this manner of education worked for many deaf-blind children who were originally referred as being too low in their functioning to benefit from services.

A third critical variable was to develop a system of delivery of services. It was often stated that services must meld into a total continuum of services rather than into a series of particular services. If a program for preschool age deaf-blind children were established, part of the primary planning was to state where the children went for further services after this program was no longer appropriate. Thus program personnel had to know what other programs would be available for children. These programs had a vested interest in the development of appropriate programs to receive students in the future. A continuum of services (Fig. 1) was outlined for deaf-blind children. Programs had to fit into the continuum and relate to previous programs and future programs in order to receive funding from the Regional Center.

FIGURE 1

AREA CENTERS FOR SERVICES TO DEAF-BLIND CHILDREN
Callier Hearing and Speech Center
Dallas, Texas

LEVELS OF FUNCTION AVAILABLE TO THE DEAF-BLIND CHILD THROUGH PROGRAMMING


Birth (developmental age)
1
2
3
6
8
12
16
Adulthood
VOCATIONAL SETTING
pre-vocational and vocational training
SCHOOL SETTING
work adjustment and vocational training
EARLY EDUCATION SETTING
educational programming
communication systems
HOME SETTING
self-help skills
behavior management and environment orientation
diagnosis and evaluation
life threatening medical problems

A fourth critical area, and this was seen by many persons as the first critical variable, was the fact that there was no professional staff in the region whose formal training had centered on educating deaf-blind children. This was indeed a problem, however it also allowed for investigation of alternative staffing patterns and closer looks at what types of persons are effective as teachers of deaf-blind children. In not having trained teachers of deaf-blind children, it seems that some of the biases were minimized as far as what the children could do and what they needed. The programs became not only educational placements for children but also places where teachers learned about teaching deaf-blind children. It was necessary for the initial staff to remain flexible, to be creative, and to review what had been done to see if it met stated goals and objectives. This does not mean that trained teachers of deaf-blind children could not have done the same, but there was a spontaneity which the non-trained teachers had that came from learning in the classroom. This also allowed for greater use of parents, volunteers, and aides in the classroom and seemed to encourage greater participation on the part of these personnel to assure that educational goals were met by teachers, and pupils, as well as other staff members. This allowed for different strategies and approaches to educating deaf-blind children to be tried (Hammer, 1971). The lack of trained staff also seemed to encourage a greater reliance upon documentation since the teachers needed to see how they had been effective and how they could improve their classroom approaches.

One other variable which seemed to be critical in beginning educational programs for deaf-blind children was in parent services. Everyone seemed to be for more and better parent services, but no one seemed to know what was needed in the way of parent services or how these could be effectively delivered. It became necessary for investigations to be made which centered on the family, its function and contribution to the educational process, and to try to gain a complete picture of how stress was encouraged in the family when one of its members was disabled, (Hammer, 1972). Members of the staff of the Regional Center are now beginning to fit together this picture and are beginning to be able to outline the alternatives for delivery of services to parents.

In the following presentations, two specific aspects of the critical areas of programming for deaf-blind children will be discussed. The first is a paper by Dr. Judith R. Burroughs, clinical psychologist at the Callier Hearing and Speech Center. Dr. Burroughs will discuss assessment of multi-handicapped children, the rationale for assessment.and how these data may be applied to the educational program. Dr. Burroughs is Director of the Individualized Instruction Project at Callier Hearing and Speech Center and has developed a very comprehensive approach to collecting essential data which assists the teacher in planning specific activities to meet the individual needs of each child.

The second presentation will be made by Dr. Robert Stillman, Director of Research for the Department of Otolaryngology, Southwestern Medical School of the University of Texas at Dallas. Dr. Stillman will address the issue of measuring progress in deaf-blind children. This study will describe a concise, easy to administer, and quantifiable scale for the measurement of developmental progress among deaf-blind children and the results of administration of this scale to a large population of deaf-blind children.

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PARENT-PUPIL EDUCATION: A THREE-DIMENSIONAL APPROACH

Phyllis Harper, parent-pupil tutor, Illinois School for the Deaf, Jacksonville

Parent-pupil education is a comprehensive tutorial program which has been offered at the Illinois School for the Deaf since 1965. Functionally, this program is a three-dimensional one, each of which involves at least the parent, the pupil, and the tutor. These three divisions with which this paper will deal are:

(1) the parent-infant (0 to 3)
(2) the parent-child (3 and up)
(3) The "clinical" family

Logically, the 0 to 3 parent-infant program will be the first discussed. Let me start off by stressing the fact that informality and casualness have been of major importance throughout this program. There have been no studies or particular data processing carried out on these infants or families. Consequently, the purpose of this presentation is to share the "happenings" of such a program in its uniqueness to our residential environment.

During the past seven years, the parent-infant program has functioned from a variety of locations on our campus. Basically, we have always felt that a model home need not be a pre-requisite for a parent-infant program. Whether using an area in the clinical suite, a portion of a dormitory study hall or living-room, or a classroom in the Kindergarten/Special Unit Residential Building, effective tutoring and learning can take place with meaningful carry-over into the home. It is a simple matter for a mother to describe her particular home setting and explain her particular problem to the tutor. It is just as simple for the tutor to deal vicariously with the issue in order to handle corrective processes. We do not feel that it is absolutely necessary to have:

the crib the baby occupies to show "around-the-crib" activities,
the playpen to demonstrate all of the language and teaching applicable to that setting,
the rocking chair from which to comfort, read, or just hum and fondle the child,
the T.V. the toddler bangs with a hammer or blocks its view from others,
the washing machine into which baby throws mother's wig,
the pet cat or dog the baby plops on, squeezes, or pulls at like it's a stuffed animal.

After having been carried out from each of the variety of settings previously mentioned, and after having said it's not absolutely necessary, we, presently, are conducting our program from a "home-like" setting on the second floor of the Administration Building at the Illinois School for the Deaf. Strategically, we are adjacent to the building which houses the pre-school/kindergarten department. This unit serves as an integral part in the operation of the parent-pupil program.

In this paper, my intent is not to prescribe developmental lessons in child development, auditory training, speech, language, concept development, total communication, or parent counseling. This presentation is not intended to be a curriculum guide, but program descriptive rather than prescriptive. While it will deal in general with what happens, obviously it can not specifically treat, step-by-step, how it happens.

What occurs once a family enrolls in the parent-infant program? Just for a point of reference, let's consider a family with a hearing-impaired child, chronologically aged, plus or minus, 1.0. Usually, this family will be enrolled in parent-pupil tutoring for a minimum of two years (3.0=age of entrance in day class programs) or a maximum of three years (4.0=minimum age of enrollment at the Illinois School for the Deaf). There is no legal or illegal time factor, i.e., one child had been enrolled in our program for as short a period as one month and another for as long a period as eight years.

The newly enrolled family arrives at the designated time at the switchboard-information desk at which time the tutor is called down to meet and greet them. Essentially, it is at this very moment that impressions, attitudes, exchanging of information and observations start to take place. Even while proceeding to the elevator (a short distance from the desk) and riding up to the second floor, things continue to happen.

Once on location, comfortably seated in the living room of the parent-pupil complex, the program is explained to the family: the overall objectives, mechanics of scheduling, discussion of how the child, the family and the tutor will probably interact and just about any and everything else that might need to be said at this particular time. Often of great importance to the tutor are those things which, indeed, have NOT been said. In the early phase of a new family's experiences in our program, emphasis is placed upon developing parental comforts, attitudes and understanding.

At the end of the first one-and-one-half to two-hour session, a wealth of information has been shared. The tutor has some very definite ideas about:

(1) How frightened or comfortable the parents are with:
  a. each other
  b. their child
  c. the tutor
  d. the tutoring situation
(2) The parents' level of intellectual and emotional functioning.
(3) The parents' knowledge of the problems for their hearing impaired child—for themselves.
(4) Whether the parents communicate with their child.
(5) How the parents communicate with their child.
(6) The motor behavior of the child.
(7) The child's visual and auditory behavior.
(8) The quality and quantity of the child's vocalization.
(9) The child's signing skills.

Directly and non-directly, the focus of the weekly, semi-monthly and monthly sessions continues to be directed to parental needs, ability, competencies and desires. During structured and informal activities with the child, the tutor is the primary "doer" during this early phase and the parent, the "sponge-like" spectator—hopefully there is much absorption taking place. The tutor, while working with the child, takes every opportunity to explain to the parent what she is doing, why she is doing it, and how. The tutor's goal is to expose the family to all areas of development, making them aware of what is essential and unique to each area, and then to provide a good model for them to imitate. The parents are constantly reminded to monitor the language, behavior, and actions of the tutor and encouraged to question any and everything as we go along. As with the hearing-impaired child, we feel parents need to have a great deal poured into them before we should expect back competent and confident performance on their part. After a great deal of tutor input, the teacher then encourages increasingly more parental involvement. While continually guiding the parent to become the effective doer, the tutor refrains from dictating this role. It's enlightening how often and more importantly, how comfortably the tutor is told by the parent. "I'm not quite ready to try that yet."

Let me impress upon you that from the very beginning there is always parent participation and guidance, however primitive the level. We initiate at the earliest stage such things as the parents' need to get down to the child's level (or lift the child up to his), to communicate in a meaningful sense, to take time to try to understand the child's wants, and emotional needs. This is a necessary and automatic ingredient of every session.

The parents in our program seem to grow solidly and mature rapidly during the early parent-centered phase of this program. They quickly discover that there is nothing more important to us than their well-being and peace of mind. They quickly learn that in whatever way we can, we will help work through their emotional needs if by no more than really listening—not only listening to them, but really hearing what they are trying to say. We find such a critical difference in the two. The problems and issues raised by the parents are not always related to the handicap of deafness but are equally welcome. Issues specific to the education of the deaf are met with professional integrity, competency, and objectivity—all essential to parental well-being.

Our concern for the pupil is for adequate and appropriate development of the total child. We see first a child and then a child with a hearing loss. As the emphasis shifts from a parent-centered to a child-centered program, many ancillary services have an effective role in the overall progress of each child and family. The audiologist, psychologist, social worker, cottage parent, and classroom teacher provide some of these services.

Auditory awareness and training, formal and informal, are always an essential set part of our program from the very first session. Preparation for audiological evaluation is done by the tutor who works very closely with the school audiologist. He is readily available to the families in the parent-education program even prior to his formal testing.

At the time of formal testing, the family accompanies the tutor to the testing suite and observes all testing procedures. However often we must return to complete the audiological evaluation, the parents are involved . . . watching, learning, participating (if need be) in all that is necessary in just getting ready to have a hearing aid prescribed. No matter how early the child gets his aid, the parents are ready for the next step . . . helping the child to become a good hearing aid user . . . helping him learn to "listen" however fragmented the signal. These parents don't expect their child to put on a hearing aid and hear as one puts on a pair of glasses and sees. So, now the audiologist has become a part of this parent-pupil tutor team.

Through play, motor, social, intellectual, and environmental development, the child grows cognitively, conceptually, and reaches the stage of academic readiness. To the parent-pupil-tour-audiologist team is added still another service in the role of the school psychologist.

At any point, the clinical psychologist is available for any assistance the tutor may request. Annually, each pupil's growth and development is measured clinically and always prior to the child's admission into school. This is an excellent, systematic check and balance for the tutor. It helps to keep in perspective what the tutor thinks she's taught, what she needs to teach, and what the child demonstrates he's learned.

Once an appropriate level of learning has taken place, the child's exposure to a formal classroom setting and participation in group activities seems relevant. The pre-school/kindergarten classrooms are readily available to the tutor, pupil, and family and much is gained from this experience for both mother and child.

From the three levels of the pre-school/kindergarten classes, the family is able to observe a variety of 4-, 5-, and 6-year-old deaf children—bright, average, or slow; perhaps, multiply-handicapped children with good speech, or no speech—and yes, total communication in action. Specifically, there is the opportunity for observing their own child in a group situation, both formally and informally—for a portion of at least four to six tutoring sessions. The kindergarten supervisor and classroom teacher become more than casually acquainted with the family and child. This experience is beneficial to the family even if the child is to be enrolled in a local regional day class program. The parents have observed a quality pre-school/kindergarten program in action and now have a basis operatum.

For the family whose child will be enrolled at the Illinois School for the Deaf, parent-pupil education is further extended—an extension about which too much cannot be said. The role of the cottage parent in relation to the residential student and the parent is meaningfully shared with this prospective family. It is not an easy matter for a family to place a little four-year-old in a residential program, no matter how fine the facility. This placement is made less painful for both family and child as considerable orientation is done with these families regarding not only:

(1) observation time spent in the pre-school classroom

(2) child's actual participation in class activities

but also:

(3) in-depth involvement in kindergarten residential program

(4) repeated contact with kindergarten cottage parents who would be assigned the new student

(5) free play experiences in a group situation on the kindergarten playground and in the living room.

After one, two, or even three years in our parent-pupil tutoring program, a family whose child is to be enrolled in the Illinois School for the Deaf must initiate formal application for enrollment through the Department of Children and Family Services in their own local district. The social service staff at the Illinois School for the Deaf assists in the implementation and interpretation of this process at whatever level a family runs into difficulty.

Finally enrolled in school, there continues to be an on-going exchange—tutor to kindergarten teacher to parent if, indeed, this is necessary for greater understanding of the child, the parents, and the family.

The parent-child program for the 3-year olds and up is made up of a different population of youngsters. This is the next dimension I will briefly discuss. The parents, although quite sophisticated at this stage, are still very involved in the educational process.

The students for the most part are those who are:

(1) Students enrolled in a day class program for the deaf in their local region, or

(2) Hearing-impaired students enrolled and functioning successfully in a regular public or parochial school setting.

One of the measurements of success of the parent-pupil-education program is the request of many families to remain in this experience even after the child has been enrolled in a local educational program. All too often, massive support, guidance, and education are given to the family only at the pre-school level. Our philosophy not only encourages continued participation but attempts to make provisions for this all along the educational continuum.

In the state of Illinois, there is cooperation and communication between the local directors of regional day class programs and the personnel of the Illinois School for the Deaf. Consequently, there are families enrolled in this program whose child is enrolled:

(1) In a nursery school program.

(2) In a day class program in his district (for deaf and/or hard of hearing).

(3) In a regular school program.

(4) In a parochial school program.

The families who elect to continue in this program are directed in their role as a parent of a four to six-year-old, which certainly differs from the role of a parent of a child from 0 to 3.

Those children in this grouping who attend school in a normal hearing environment need additional guidance for themselves, for their parents, and for their teachers. The tutor makes every effort to visit the nursery school, regular or parochial school program to observe how effectively the hearing-impaired child is involved, what his needs are, and what help can be offered the teacher. To this point, those few students who have been integrated have met with success mainly through their own efforts and the expanded role of parental involvement.

The third and final approach to parent-pupil education involves the group that I will call the "clinical family" group. This segment is made up of families assigned to the parent-pupil tutoring program for one of any variety of reasons. The need may be:

(1) To ascertain the educational potential of the child through diagnostic teaching.

(2) To work on preparing the child to accept separation from the parent for residential placement.

(3) To condition the child for repeated clinical evaluation that initially was unsuccessful.

(4) To provide the educational dimension to clinical evaluation. These are specific goal-oriented situations. The tutor's task is to function with the specific behavioral objective in mind, again intimately involving the parents in the process. The parents in this population are often more critically involved in helping the child reach his goal because of the parental attachment to the problem.

The slide presentation and discussion to follow at this time will reinforce the philosophy of the Illinois School for the Deaf that seldom one thing or one person is responsible for success. Success depends upon the cooperation and involvement of many persons contributing toward making one perfect whole.

TABLE I.—PARENT-PUPIL TUTORING—1965–73

	Children seen during academic year	Number of tutors	Children		Children in program 2 years or more	Children in day class program	Children in public/parochial program	Children in nursery school
			0–3	0–4				
1972–73	14	1	3	8	8	4	3	0
1971–72	11	1	5	5	8	3	2	1
1970–71	16	1	3	9	9	3	3	0
1969–70	20	1	11	18	11	5	2	1
1968–69	30	2	14	25	13	4	4	0
1967–68	29	1	15	23	9	0	3	1
1966–67	25	2	13	13	6	1	6	0
1965–66	19	1	6	11	0	1	2	0

TABLE II.—SUMMARY—STUDENT PROFILE

Hearing loss:	
Profound	64
Severe	14
Moderate	9
Mild	7
Normal	3
Present educational placement:	
I.S.D. or other State school	65
Private residential school	3
Regular public school	7
Day class	7
School for retarded	6
Unknown	4
Not enrolled	5

THE NORTH AMERICAN COMMITTEE ON SERVICES FOR DEAF-BLIND CHILDREN AND YOUTH—COMMITTEE ON STANDARDS

Verna Hart, Ph.D., professor of special education, University of Pittsburgh, Pennsylvania

The North American Committee on Services for Deaf-Blind Children and Youth came into being as an offspring of the National Committee on the Deaf-Blind. The parent group was primarily composed of personnel from the seven or fewer schools for the blind in this country who, through the years, had enrolled children in their deaf-blind departments.

The rubella epidemic of 1963–65 was inadvertently responsible for the establishment of the North American Committee, for it brought many changes. The numbers of deaf-blind (D/B) children enrolled in classes rose from less than a hundred to over three thousand children who have now been identified as needing services.

There has been change not only in numbers, but the etiology differs from the former D/B population. More severely involved children now require services. Diagnostic personnel who never before had even seen a deaf-blind child have become involved in their evaluations. New techniques of evaluation and education have had to be developed, for many of the children have not responded to methods developed for higher functioning children. Because of the large numbers of children and the shortage of trained personnel, the traditional ratio of trained teacher for each two children has had to be disregarded in favor of other patterns of staffing. Medical personnel have become interested in varying degrees, some writing off the children as completely hopeless and others becoming so involved that they have been responsible for establishing educational programs.

Local, state, and national education and/or welfare departments and agencies have become involved in providing services for children who, at previous periods in our history, would have been denied educational programs. No longer are a few residential schools involved with D/B education. Although the deaf-blind programs in the residential schools have been expanded, the majority of children are now being instructed in other settings.

The National Committee on the Deaf-Blind responded to the need for a professional group for all those newly involved with serving deaf-blind children by disbanding its former role of serving primarily those in residential schools for the blind and becoming the North American Committee of Services to Deaf-Blind Children and Youth, with membership open to those interested in or providing services to D/B children.

One of the first concerns this group addressed itself to was the quality of the varying types of services provided to the D/B child. Many programs were excellent but, unfortunately, some were very poor, with the children the ones to suffer from the lack of uniformly good services.

Money had become available to local programs through the Federal Government's Centers and Services to Deaf-Blind Children. At their inceptions it was important to merely locate and provide for the children. However, the North American Committee, in June of 1972, decided that personnel and programs had reached the point where professional standards could and should be considered. Rather than having those standards imposed by others upon the group, it was felt that improvements could come from within by working as a professional group.

A committee was appointed and it is currently preparing standards which various types of personnel providing services might consider when evaluating their programs. It is hoped that this will lead to accreditation for programs serving the D/B population.

One of the outcomes of the work of the Committee on Standards has been the designation of specific needs within the field. Each time a standard has been discussed or proposed, questions have arisen as to how those who fail to meet the standards can better prepare themselves. It is felt that several factors should be considered for such upgrading of personnel. Uniformly good programs could result from such activities as:

1. Establishing a registry of all programs and professional personnel currently working with D/B children.
2. Setting up a registry of persons who have unique expertise in some type of service to deaf-blind children. This would allow those in need of consultation in a specific program to choose someone with skills in that area. Each region would hopefully have a complete roster within the region for in-service work. Traveling teams might be established.
3. Collecting curriculum materials to be reviewed, evaluated, and the information disseminated to those in the field.
4. Meeting with personnel from the various diagnosis and evaluation centers to discuss appropriate D & E referral procedures, goals, terminology and techniques with standardization of records on a nation-wide basis a goal. A national meeting of deaf-blind personnel can then be called to disseminate information resulting from the meeting. This will permit greater uniformity in implementing evaluative information and recommendations.
5. Assessing the needs in the area of D/B research with plans undertaken on a national level to meet the needs. This will prevent duplication of effort, insure maximum use of personnel, and encourage competency in research design and implementation.

A standing research committee is to be appointed by the North American Committee on Services for Deaf-Blind Children and Youth to establish long-range planning and priorities for implementation. This research committee will cooperate with the regional centers, investigate, coordinate statements of need, and give a rationale for the suggested research. It will outline a long-term research plan and establish priorities for its undertaking.

Together with the regional center personnel and with agencies that have expressed interest in implementing various aspects of the research plan, the committee will generate, help develop and/or review proposals to be presented in order of national priority to funding agencies. The committee will serve as an ethics and standards committee as part of its review. Thus, the D/B research procedure will be a professional self-monitoring model service in research and planning.

These are all activities which will aid in establishing standards within the field and will help those providing service to D/B children and youth to meet the standards.

USE OF MEDIA IN VOCATIONAL TRAINING

John W. Hodgson, O.St.J., vocational vice principal, Ontario School for the Deaf, Belleville

It was with a deep sense of humility that I accepted Mr. Dawson's invitation to discuss a topic with such broad implications, at times subject to controversy, and assailable as an expensive gimmick in education. As a group you represent a wide variation in the availability of equipment and facilities. Some of you have, or perhaps feel, little need for this material. Others in the audience come from schools having full-fledged media departments, operating extensive media workshops and having adequate budgets and excellent Federal funding.

By inviting me you have honored our school and the Province of Opportunity, as Ontario is referred to. Our Belleville School would fall somewhere in the middle category since we do have, as part of the Teacher Education Center located on our campus, a well-equipped Media Center with a staff of one Media Specialist and two Media Technicians. The assistance of these men and their equipment is available to us. In addition to that our department is part of the school television network for closed circuit programming. We do have our own Super 8 camera and projector as well as other projection equipment all of which is mobile for use in our classrooms.

Vocational education in schools for the deaf has come a long way in the past ten years with some schools building excellent, well-equipped facilities. The successful beginnings of N.T.I.D. have raised technological training to a new status. I would hope then that the Conference inclusion of the topic on the use of media in vocational training is indicative of continued efforts to upgrade that form of preparation for life—yes, and that part of life which we call leisure.

I would, at the very outset, like to quote a very appropriate passage from President Nixon's Inaugural Address of January 20, 1973, when he challenged American citizens in the following words, "In our own lives, let each of us ask not just what will government do for me but what can I do for myself." I would like to paraphrase that in terms of your production and use of media by saying in so many words, "In our own schools let us not complain about the lack of adequate and suitable media but ask what I can do to improve my own use of media." I would, if nothing else, wish to leave with you a firm conviction that you are only limited by your own imagination and ingenuity. Not just your personal ingenuity but that of your pupils for it has been our experience that when students are involved in preparation of media their fertile imaginations can generate useful aids far beyond our expectations.

The title of my subject contains two words which I would clarify at the very beginning, "media" and "vocational". To me the word "media" describes "means or agencies" within the larger field of communication. As educators we are engaged in communicating facts and ideas in an attempt to reduce ignorance and to promote understanding. Media are means of transmitting, clarifying, augmenting and testing what we are communicating.

In the past half century we have moved rapidly away from rote learning to learning by investigation and discovery. Our pupils now understand much more fully the reasons why things happen and how things work. I would suggest that much of this change can be credited to, or was accelerated by, the use of media; media which involve sight, sound, smell and kinesis. For this discussion "media" will refer to the wide range of visual aids from films through realia to the chalkboard, each with its own unique adaptability.

I do not intend to get into a philosophical discussion of media as a crutch; to the extent to which pupils need crutches to understanding or to the type of learning disability which benefits most from such crutches. My eye glasses could be called a visual crutch, but I do not need them to see the beauty of the sunset. I believe that our duty as educators is not necessarily to wean senior pupils away from these learning crutches, but, to judiciously examine our teaching methodology so that we do not unnecessarily use media crutches when other methods would work better.

When the word "vocational" is used it seems to have as many meanings as a toad has warts. Among our schools we have a very wide range in the availability of skills—training mechanical equipment. The programs vary from the academically oriented schools having Industrial Arts classes to those with trades training emphasis using much sophisticated equipment or skills acquisition at high levels. In Ontario we approach the latter type of school. So, when I am addressing myself to the area of vocational training, I would like to cover the whole gamut whether you call your classes "shops" or "labs", whether Industrial Arts, pre-vocational, vocational or technical. I would like to provide a smorgasbord of ideas from which all categories could get nourishment.

To examine the various media we will start with that which seems to come to mind quickly—and may I say that I do not place it first because it is the most important, for we find from experience that no one medium is equally useful in every situation.

I am first speaking of 16 mm commercially made films. Our school catalogues are full of them. Film libraries across the country have very extensive collections of them on every topic—almost every topic that is, because there is a real paucity of films on vocational subjects. Even of those which are available the greatest numbers are vocational guidance films showing workmen at different trades or occupations. These are fine to give insight to pupils unsure of the direction of their life's work. Unfortunately too many of these films are prepared for the hearing by people who do not understand our particular needs and always show the glamorous side of the occupation. We see, as it were, the adulation piled on Neil Armstrong after his return from the moon, and not the months of study, practice and conditioning which he went through.

Some of the most useful films for us vocationally are those produced by government agencies and by the great industrial corporations. These are usually in the field of primary industry; lumbering, mining, smelting, refining, production of electrical energy and similar activities. These films can bridge the gap of understanding on how the tree becomes plywood or how the chunks of ore become the bar of metal. These are very valuable because it is not physically possible to take our pupils into dangerous manufacturing areas on field trips or to cover the distances involved. Many industries do not want pupils in the factories in the first place and so, with films, we can bring into our classrooms or shops the operations of equipment which they would never otherwise see.

Some of you are of course more fortunate than others. In fact we are within twenty-five miles of an iron mine, a veneer factory and two electrical generating stations. However, regardless of what local advantages you have, I think you will find that your greatest use of 16 mm films will be in the introduction of units of study and in shop language at various levels.

There are certain problems with 16 mm films with which most of you are familiar. We do not have the finances to own the films, and even if we did it would be wasteful spending for the individual school.

Thus we must depend on film repositories. The most popular ones must be reserved months in advance and even then we may receive a substitute film. None of us is so perfect in our teaching that we can reach the appropriate place the day that the film arrives. The result is that when films come we quickly check to see if the equipment is operable, we reserve it and show the film because it is there not because it is opportune or most significant at that point.

Because most films demand our previewing for content and language level we have provided our shops with a tape recorder for use when the film is being previewed. The sound track is then available back in the classrooms or at home without unnecessarily tying up the projector. The teacher can, in this way, prepare his new vocabulary and lesson plan.

I am not aware of any school which has successfully produced many quality 16 mm films so we will be discussing other types of media which you can produce more satisfactorily. However, as a parting shot, I feel that there is much value in keeping a carded index synopsizing the films used, noting content, acquisition details and giving your own personal evaluation.

In the United States, thanks to Federal funding and some excellent leadership, some valuable work has been done in the captioning of films and studying the attendant problems. The greatest of these is the preparation of the appropriate language for the groups who will use the film. Once captioned you cannot, of course, erase that language and substitute other captions for the classes two or three grades lower.

These films are not available to us on loan in Canada. If we wish to use them then we must purchase them and we have done that with some family living sex education films. Our National Film Board has done some studies on captioning but as yet we have no captioned vocational films and we have never shown any in our department. It would therefore be most presumptive of me to make any judgment on captioned films for trades training work.

One type of medium which has made great advances in our province in the past decade is educational television or E.T.V. I feel sure that your states have made equally great strides and we can all trace the progress in producing more suitable programs, better scheduling and broader topic coverage. Along with this have developed ways of making the material more valuable to the schools by preparing detailed program guides on the lesson materials, long range scheduling to fit into courses of study and now E.T.V. channels exclusively producing very high professional-quality shows for schools and universities.

With the facilities in schools for the deaf suitable programs can be taped. Fortunately we have facilities for captioning these tapes. As a matter of fact we can retain a master tape and, with the proper scripts, can recaption copies for various language levels. For vocational purposes the productions tend toward demonstrations of phenomena in physics and lessons on mathematics and science. I think that it would be fair to say that there is a long way to go yet before educational television becomes an integral part of classroom work and not just an accessory. So much of the future of this medium depends not just on quality programs but on how well the teacher is able, and how willing, to use it. I suspect that he will not employ it much better than he does the 16 mm films.

At this point perhaps we should move on to a most versatile piece of equipment. I am referring to the small portable television cameras of which there are several good ones on the market. I will refer to the Porta Pac because that is the one which we use. We like to take it on field trips to bring back a record of significant points of interest. Very often pupils do not fully appreciate the importance of what they are seeing or, indeed, may not see the things which you want them to observe. You can film jobs which can be filled by students when they finish their training in your shop, can capture the work done by more complex models of machines than the ones which you have, or can record details which you wish to stress. Because it is simple to operate many of our teachers have taken the portable T.V. camera on their visits to industry. The reviewing of the film should not be the lesson, but it can put flesh on the bones of new vocabulary, can assure a sequential lesson and provide repetitions for concepts to sink in. You know all too well the difficulties in getting carry-over between lessons and the real thing in another situation. The portable T.V. equipment can help you with these carry-over problems. So, learn how to operate it and take it with you on every opportunity.

Some of you, no doubt, have developed other uses for portable T.V. cameras. I want to mention one on which I am not completely sold because it is a rather expensive procedure.

That is in training your staff on how to make Super 8 films. With the camera you can tape each sequence for your single topic story then view it critically for camera angle, close-ups, steps which are unclear, the need for improved lighting and additional labelling or printed captions. Then you can re-record the operation. You can perfect the various segments prior to the actual filming with the Super 8. The nervous participant who makes a mistake will be less timid when he knows that his error can be wiped out.

I have mentioned the Super 8. Here we have the little workhorse of vocational film making. The 50 foot films will give you two and a half minutes, which is excellent for a single concept unit. With the new high speed Ektachrome films we can get good color under normal school lighting. Single films can be loaded into a cartridge which gives you an automatic rewind at the end. You can, of course, splice two or three films together to produce a 6 to 12 minute reel. While I keep mentioning the single concept film it is obvious that when you have spliced them then you are going to have room for a multi-step operation such as the repair of a tubeless tire; steps in the repair of a dent in a car; the removal, repair and replacement of car door hardware; the selection and planing of a piece of lumber; the setting of a lathe for threading or the operation of the Graphic Arts headliner.

These are all units in courses of study which must be subdivided into sequential steps. What is the difference between the reel and the 3 minute cartridge? It is longer, has to be rewound and contains two or more steps. The cartridge should deal with one single concept. One criticism of cartridge making is the common practice of people wanting to put too much information into one package.

We prefer the cartridge because, hopefully, it will show only one step in a process which needs reviewing and not the whole operation. Perhaps all that a pupil needs in the repairing of a tubeless tire is the part on how to insert the plug. Perhaps in using the headliner all he needs to recall is the proper way to put in a new roll of tape.

Most of you realize that when I am mentioning the Super 8 work I am talking about two separate units, one a little movie camera and the other the Kodak Ektographic 8 projector. The round cartridges are extremely easy to load into the projector so that this is a piece of equipment which can be set up in the classroom area where one or two students can go and view the film on a rear-projection screen without bothering anyone or turning off the lights. What we have, in effect, is an action reference library to which the pupil can go on the same basis that he goes to the dictionary.

I would not for one moment suggest any limits to the uses which you can make of Super 8 equipment. You have some real advantages in making your own cartridges because you can film the actual machines upon which the pupil is working and yet can encompass general instructions for similar operations on other models. You can incorporate every single step and thereby overcome one of the major problems of commercial cartridges and cassettes which tend to move along too quickly, skipping the details which our pupils need. If these are to be "self-instruction" media then you cannot cram in content at the sacrifice of clarity.

The 8 mm cassette or film loop is not synonymous with the 8 mm cartridge, but it certainly is a first cousin. They are loaded with the same type and length of film. Instead of stopping and automatically rewinding the cassette just continues on over and over.

From catalogues available to us it seems, at the present time, that media producers have moved into the cassette market with a wide range of vocational topics from auto mechanics and car care to graphic arts. If we cannot afford these films then at least the topic listings are helpful in giving you ideas as to which ones are suitable for you to try.

Most of our work on cassettes has been in those areas which are repetitious; ones where you so frequently have the lad coming to you saying, "I forgot how." O.K. get the cassette and sit down and refresh your memory on how I taught you to replace the belt on the drum sander, or how to install a new blade on the bandsaw, or how to turn off the oxy-acetylene welding cylinders, to multiply with the slide rule or to set the depth gauge on the drill press. There are hundreds of these operations which are sequential or where safety is involved.

The production of film loops does not need to be limited to use in one specific shop area such as you would have if you made films on using the hydraulic equipment to pull out wrinkles in a fender or using the indexing head on the milling machine. Those of you who direct shop programs can look at producing loops for multi-shop use, for example, proper hand filing procedures, how to clean a paint brush, installation of a new hack or coping saw blade, the multiple uses of a combination square or sealing a paint can after use. These are loops of value to several shops.

So far I have only mentioned the use of media in the introductory and developmental phases of teaching. The film cassette and cartridge lend themselves well to drill and testing. Where parts of a machine are labelled a check sheet can be prepared for that purpose. The cassette can be run and then rerun for self checking.

You can use them also in conjunction with multiple-choice and even short answer tests on procedures.

Some of you are going to ask about film life when loops are projected over and over hundreds of times. Our Media Center has overcome the frictional deterioration by the application of "Pledge" on a clean cloth. Because of the silicone and the anti-static properties in that product the life of cassettes can be greatly extended.

Without unduly prolonging the discussion on all types of media which we might categorize as "motion pictures" I want to assure you that there are topics which do not lend themselves to film at all. Such subjects as the carburizing effect of the oxy-acetylene flame, the repellant characteristics of an offset printing plate or the hardening of metal by pounding are just a few of the dozens of topics which must be taught and experienced by other methods.

Let me say this as we leave. We must never forget that we are a school and not a Hollywood studio. We are concerned with the teaching value of the film and not the technical perfection. We are only producing the films where the expenditure of class and staff time, translated into money, can be justified on a long term basis. In those schools which have a theatre arts option the results will be less amateurish and skills in film making procedures will come more quickly.

Now we have reached a point where I feel like the Arab sheikh who has just inherited a harem. He knows what to do but he doesn't know where to start.

So it is when we begin to consider film strips and the closely related 35 mm slides. The commercial production of film strips goes back many years. The academic departments of our schools have very extensive collections of them covering the whole curriculum. Vocationally the early emphasis was on film strips for Drafting and Graphic Arts. This has now spread to Machine Shop, Sheet Metal work, especially the layout or development aspects and to Welding. There are still extremely few for Auto Body, Upholstering, Finishing, Building Construction and Mill Work. The reason is no doubt lack of demand.

A very great number of vocational film strips are made from progressive steps of drawings. For this reason they are not cluttered with non-essential details. Many are made with changes shown by overlays in color so that the message is unmistakable. The labeling tends to be excellent. The language used in captioning is usually technically accurate so that the teaching of it helps to greatly increase the pupils' vocabularies.

Two features built into the design of the film strip projector have resulted in major advantages for this medium.

They are the facts that one frame can be projected for an indefinite time without damage and that the film can be jockeyed back and forth easily to re-examine a previous view or quickly rolled forward to skip frames which detract from the lesson.

I want to recommend three things which you can do. One is fairly expensive. That is making your own slides and having them assembled into a film strip. Another is to cut up the film strip to make your own slides and the other is to have the Media Center photograph frames of the film strip to produce 35 mm slides. This keeps the film from being destroyed.

The individual frames of a film strip are about 19 mm wide so that you can make up your own slides easily. I find that these are excellent because one can rearrange these according to the needs of the lesson.

Some lessons may not need more than two or three frames to illustrate some particular aspect yet many teachers are reluctant to show such a small percentage of a whole film strip.

What I want to point out, and I realize that I am only reminding you and not telling you something new, is that film strips and slides seem to have their greatest vocational value in real stand-up teaching and should augment or clarify, not become the lesson, as a film is wont to become. As far as I am concerned there is no substitute for good stand-up teaching with media used to reinforce or to promote understanding.

I have mentioned the two methods of converting film strips to slides. Have you considered making your own 35 mm slides? For those areas of vocational work where no suitable film strips or slides are available, or, for those schools which have very limited budgets this is an excellent answer.

Instead of trying to use the small diagrams from a number of texts or magazines may I suggest using photos of the real thing. For example, when cams are being introduced in Drafting you can show a set of four or five slides of the actual cam on sewing machines, on the linotype, on the paper pickup of the Davidson offset, on packaging machinery or on other applications. Similarly when you are teaching styles of period furniture a collection of slides from which you can chose the right ones would help. Photos of various shrub and conifer plantings are extremely useful for teaching landscape gardening in a horticultural program. I could go on and make suggestions for collections of slides in many subject areas and you can see that these are only limited by your own ingenuity.

Other uses of slides are the "before and after" ones for auto body repairs, welding projects, building construction alterations or any restorative project. You might consider keeping a collection of slides of finished projects. These can serve a number of purposes. When woodworking pupils, for example, are selecting a style of end table to build they can choose from photographs of projects which you know are within their capability. Or, when introducing your course of study to new pupils you can present them as, "This is the work which we hope to cover this year". or, "This is how far we will progress this semester." They have real value too in explaining your course to visiting parents, to educators or in public relations work in the community.

How often are we trying to explain something to pupils where the parts are small, or where we have a limited number of one tool, such as the vernier caliper, or where the class cannot gather close enough around a machine to see the details? I am thinking of the threading of the sewing machine, the adjustment of a gas engine carburetor, of the timing mechanism of a pop-up toaster or adjusting the roller guide under the bandsaw table. Here is where a few slides taken with a close-up or ultra close-up lens can give you pictures to project so that all can see. Discuss the procedures on the screen, then when you go to the real thing the pupils will know what you are talking about. Our Woodworking teacher finds this is a good way to discuss the cell structure of various types of lumber.

I seem to be reminding you of media uses with which you are quite familiar. Let us then push on to something which all of us can make easily. These are the transparencies for the overhead projectors. Your first experience may have been with the eye-straining clear ones. Then you removed the glare by using the colored overlay. Those familiar with the diazo process know how to produce the transparencies with the dark backgrounds. Classes can study these for long periods. Did you know that you can use the carbon sheet from the Thermofax stencils to do the same thing?

As our staffs become more proficient at making transparencies they produce ones with four and five overlays giving progressive steps in contrasting colors. These are an excellent supplement to a lesson on procedures. Even at the lowest shop levels you can have overlays of tools with the parts labelled or names removed for testing.

Transparencies can be made to match instructional aid sheets or the illustrations from text books. I have brought some of these with me. You will see how colored adhesive film has been added to give more clarity. Another example of the use of color can be seen in a transparency series used in the lesson on rounding of decimals. I use it because an understanding of that operation is essential in micrometer work, in teaching the slide rule and for numerical control programing.

There are some very fine projectuals on the market now for use in teaching almost every line of shop work. I am pleased to note also, that in our country at least, many of the finer ones have been prepared by shop teachers with artistic talents. These have been reproduced in sets commercially.

Before I leave media requiring projection I would like to say a word about the Instructional Media Center. There are two schools of thought as to where media should be kept. One would claim that all media should be in a central location under one jurisdiction for inventory, issuance and repair. Others would prefer that media should be in the classroom, immediately available, probably better taken care of by the people who made them and more likely to be used by those who are frustrated by the other system. Staff who find that media are not returned, films not rewound or slides out of sequence just won't be bothered. Take your choice, but if you find that teachers are not using the materials then look to the system.

When I began I warned you that I called everything media which helps to promote understanding, especially when we are dealing with concepts which are difficult to visualize. I must therefore include realia—the real thing—the three dimensional objects which can be handled. One of the speakers this morning can confirm the very great emphasis which our shops have put on collections of such teaching aids.

I put these into three categories; reduced scale models of machines, structures and objects too large, heavy or complicated to bring into the classroom; enlarged models of things with details too small for class viewing such as a vernier scale, the micrometer and thread shapes; and finally the actual objects. I want to recommend, as research projects for pupils, the collection, mounting and labelling of anything useful, from all types and sizes of nails to samples of automotive clips, styles of type faces or varieties of wood. You will be amazed at the completeness of their efforts.

If you want to promote understanding then hand around the real thing especially if it has working parts. Consider, for instance, how much easier it is to teach gear trains if you have available the works from an old alarm clock. Try teaching the "dwell" on a plate cam without help. After the skillful presentations made during the space flights how can anyone overlook the educational value of working models.

Among our reduced scale models we have scaled frames of buildings, a city street for perspective work, miniature models of cars and even tiny furniture.

Our enlarged scale collection ranges from foot-long pieces of hand type, gear teeth, thread shapes, lathe tool bits, slide rule, to indexing plate for the milling machine and many, many others. There is just no limit to the hands-on media which can be collected. I guess that a good teacher would make a good squirrel.

Fortunately very many of the models make excellent projects for other shops. Think of the machining exercises, for instance, in making a double-scale lathe tool post for use in Drafting exploded assembly or on half section drawings. Consider the study and experience in reproducing the essential details of a wood shop jointer in a scale model. Our pupils have done these and others.

I would be remiss if I did not mention the number of great corporations which have made available some excellent step by step samples of their products.

Lastly, I want to say a few words about our most valuable medium, the chalkboard. I won't say it is misused but I wonder if we can use it more effectively. I do not just mean the use of color or increasing the amount of traffic by the pupils from their seats. What I would suggest is that we can improve our chalkboard organization.

I am going to propose that you should have an area, perhaps on the extreme right where you can list each day's new vocabulary from the lessons. I would suggest that the far left be kept for the summary as the lesson progresses.

This leaves the central part, the working area, for calculations, sketches, pupil answers and the display of material. As the result of having used this method I have seen pupils who, while they could not give the correct answer the next day, could point out the approximate place on the board where the information had been written. Let us not minimize the value of the chalkboard just because we are under the impression that our superiors expect us to use more sophisticated media.

You have been subjected to a pretty heavy meal. I hope that I have not seasoned it too heavily with personal opinions. I wanted to convince you that you can fill the gaps in the shortage of good material for your vocational programs at whatever level you work. Please give some thought to the suggestions for I think that we can use media more effectively.

THE EFFECT OF EARLY EDUCATION

Roy K. Holcomb, area supervisor-deaf, Santa Ana Unified School District, California

Introduction

In my opinion, the effect of early education for the deaf can be, not only beneficial, but far reaching. It is during the early years that the foundation for the future development of the child is laid. The early years are a crucial time in the child's life—a time that can make or break his entire life. Opportunities for early child development should not be ignored.

As we all know, many of our deaf children come to school for the first time knowing little or nothing. Some do not know the names of the members of their family, let alone their own names. This is a very sad situation; more or less brought on because early education was not provided. The school then has to start from scratch or from very little. It is my earnest opinion that the earlier the school gets the child the better will be the chances for the child to realize his potential for full growth.

COMPARING CHILDREN AT ENTRY AGE

Let us compare briefly the child who starts to school at eighteen months along with one who starts at five, assuming that both know little or nothing. The five year old child's mind has been idle for several years and it may be most difficult to get it going because prime time for learning has already passed.

On the other hand, take the eighteen month old child, for whom some prime time may have been wasted, still has enough of it remaining to help the mind function as it should, provided the job is done right. Doing the job right does not mean "babysitting" or giving too much time to "play"-work in the school. Neither does it mean going overboard on the development skills to be input or, rather, developed in the child. While these skills are most important, we should never lose sight of the primary handicaps of deafness, namely language and communication. Unless we are able to develop these in some manner, our deaf children will have a difficult time making it in life regardless of all their other skills. To acquire language and communication there must be much labor of love on the parts of all those in the deaf child's environment; many will want to spend valuable time on the things which the deaf child does well, which seldom are language and communication.

NO TIME TO LOSE

During the early years there is only so much time to do so many things. When too much time or full concentration is given to certain tasks, others must certainly suffer. There is just not enough time to do all things. Therefore, the main goal, that of instilling language and communication, must not be lost sight of from the very beginning. These goals must be reinforced daily, even hourly. No short cuts should be taken in giving the child language and communication. The hearing child will pick up much language and communication on his own. For example, when he wakes up in the morning he may hear the television, his parents discussing the day's news, or a million and one other things. Throughout his day there will be many opportunities for him to absorb new language as well as new modes of communication.

Not so for the deaf child, and especially is this true for the very young ones. The small deaf child may go for days learning little or nothing on his own. His best chance for learning takes place only if someone will take the time and has the means to communicate with him. During the early years parents seldom know how to communicate with their children properly. They often have many hang-ups on communication; "guilt" feelings, non-acceptance of the handicap, hope for miracles, and a feeling that time will take care of all things. So parents do little or nothing during the early years, and if they do, often they are the wrong things. In my opinion, one of the most important right things at the earliest age is Total (full) Communication. Hearing children are exposed to full communication in their home, school, and life. In fact, they expect and demand it in their daily lives. Is it not then wrong to give our deaf children anything less than full communication? How are these people, who want full communication for themselves, but deny the same to their less fortunate fellowmen—the deaf, going to answer for their sins of omission? Can these people truly say that they thought part communication was good enough for the deaf while they demanded full communication for themselves? So, I repeat, full communication must be given to our children from the beginning in very much the same manner it is given to hearing children, except, that the deaf must depend more upon their vision to obtain communication. In other words, they must have the opportunities to see what hearing people hear.

WHEN DOES A DEAF CHILD READ?

One question frequently asked is when does the deaf child read? The answer, of course, is from birth. The deaf child, because he cannot hear, is attempting to read lips, faces, hands, etc., almost from birth. Of course, he has to see these things many times before they finally have meaning for him. At what age should he read the printed word is the $64.00 question. Again the answer is at the earliest age possible. And again meaning has to be given to the printed word just like it does to reading lips, facial expressions, hands, etc. We must not lose sight of the fact that our children are reading from birth and that in many ways the printed word is better than the word formed by other means. The printed word is more stable, consistent, and less fleeting. Of course, the child must be ready to read. Reading should not be forced upon the child. Opportunities for reading should begin as early as three, if not earlier. The child usually reads certain words in sentences before reading complete sentences. These words may be common articles as "a", "the", etc. The child, at first, may not even be reading these words, but only recognizing them. In any case, opportunities for reading must be presented early if the deaf child is to have every opportunity to make it. To wait until a child is six or seven to present reading is too late for several reasons. Chief among these is that the child must have every means of communication possible, at the earliest age possible, to keep pace with the fast moving world in which he lives. If the child gets behind at the beginning he has a most difficult time catching up later. Reading should be considered a very important part of Total Communication. And as to the concern that you might hurt the child if you start reading too early: this can be true if the job is not done right, but I believe the chances of hurting the child are even greater if opportunities are not provided.

To sum up:

1. Early education is a must.
2. The job of early education must be done right.
3. Deafness is primarily a handicap of language and communication.

4. Those who work with the deaf must not put more emphasis on the minor aspects than on the major aspects of deafness.
5. There is just not enough time to do all things.
6. The young hearing child has opportunities to learn many things on his own. No so for the young deaf child who will learn little or nothing unless someone provides the input.
7. Parents must accept the handicap of deafness and go all out to conquer it.
8. Total (full) Communication is a must for all people, and especially for deaf people.
9. Reading should be introduced at a very early age.
10. Reading should be considered a very important component of Total Communication.

TOTAL COMMUNICATION IS A MUST

Roy K. Holcomb, Area Supervisor—Deaf, Santa Ana Unified School District, California

Introduction

Many questions pertaining to the education of the deaf are being asked at this time. While questions have always been asked, those being asked the most frequently at this time are somewhat different than those asked in yester-years. This has become true for a number of reasons. A few of these reasons are:

1. Today there is more specialization in the education of the deaf.
2. Today there is more concern for deafness.
3. Today there is more involvement by the deaf people themselves. For example, if five years ago someone had told me that I would be an area supervisor of the deaf in California I would have probably thought that person at least a wee bit crazy. If five years ago someone had told me that my deaf wife would be teaching in a community college I would have probably laughed. If five years ago someone had told me that one of my deaf sons would be an honor roll student in the public schools I might have really thought that person quite loco. And if as recently as two months ago someone had told me that I would be the next director of the program for the hearing impaired in Delaware I would have really have thought something was funny. However, all of the above things have come to be true.

THE TOTAL COMMUNICATION MOVEMENT

There are many beautiful changes taking place throughout our country. One of these is the Total Communication movement which has taken the country like no other movement in the history of education of the deaf. Today, less than five years after this movement originated, there is practically no place in this country, and few in the world, that have not heard of Total Communication. While many people have heard of it there are still many people who do not understand it fully and have questions to ask about it. Some of these questions are:

1. What is Total Communication? Most people are in agreement that it is a philosophy. The word, "total" means all, and Total Communication means all of the communication. Hearing people obtain most of their Total Communication through hearing and the deaf most of theirs through vision. There are several ways to give Total Communication to both deaf and hearing people—as via reading and writing, fingerspelling, signing, and a combination of the above, along with speech. The best kind of Total Communication for one situation may not be the best for another situation. For example, when one is talking and when one is teaching.

2. Will Total Communication hurt the speech of the deaf? Schools using Total Communication say emphatically "no." It seems to be that the more input the deaf have, the more output there will be for speech and otherwise. In order for the deaf child to talk, he first must have something to talk about. The primary goal in our schools is to give the children the best possible education.

3. Shouldn't all deaf children first be taught wholly by oral means and later if this does not work switched to Total Communication?

This is still the common practice in many schools. However, we consider it very cruel to deny anyone an opportunity to communicate as fully as possible, from the earliest possible age. It would be most difficult for hearing people to make it with approximately one out of four words as many deaf people must attempt to do with speechreading alone. People should not force upon others anything less than they would want for themselves. Switching later is usually too late to make up for lost ground.

TOTAL COMMUNICATION IS A MUST

Total Communication is a must for the deaf. Without it they would be shortchanged much as if hearing people would be if they were allowed to hear only one out of four words. A few in both groups might make it in spite of everything. However, Total (full) Communication enhances better opportunities for both groups. Total Communication is a must in many ways.

1. Total Communication is a must to stimulate the mind so it can function at its best at the earliest possible age.

2. It is a must in order to be able to include the child in daily family functions such as at the dining table, parties, television, radio, telephone interpreting, small talk, and many other daily family actions.

3. It is a must to include the child in things going on in the child's environment. The deaf child needs full communication with his friends. He needs it when he goes to church, movies, field trips, bowling, and at one thousand and one other places. To deny him Total Communication would be to deny him many of the large and small pleasures of life one has in growing up.

4. Total Communication is a must in schools. To teach the deaf, a teacher must have all the tools including Total (full) Communication. Otherwise, very little teaching can be done.

Total Communication is a must as it gives one the communication to live with one's self. This is very important especially for those who are deaf as one must live with one's self before he can live with others. If one can live with one's self then the chances of living with others successfully are much greater.

INDEPENDENCE . . . THROUGH PARENT EDUCATION

Judith Carson Houk, director of parent education, Indiana School for the Deaf, Indianapolis

The job of parent education at the secondary level is indeed a difficult one. Parents of younger children are eager to learn and they seek advice. They visit the school often. They lean toward involvement. Consider the parents of high school students. How often do we see them? If their son or daughter is a trouble maker, we probably see them often. And why? Because they are requested to appear. Voluntary appearances are rare. I have had a grand total of five parents visit my classroom voluntarily in the eleven years I have taught high school. That leaves us with an important question. Can we do any "parent educating" of parents of secondary students?

As I have seen it as a teacher and as I am seeing it now as Director of Parent Education at the Indiana School for the Deaf, the answer is a strong yes. Not only is it possible, it is a must in at least two critical areas.

The first area is one of future planning. We need to provide answers to the question, "What will Johnny do when he leaves you?" We must provide possible solutions to the question of how Johnny will become independent. The person responsible for parent education must be prepared to provide alternative solutions to this problem. A working knowledge of vocational rehabilitation support is as essential as a working knowledge of the post secondary programs available and their costs. For the student who is not willing to or not capable of continuing his education, a working knowledge of the student's saleable skills is required. This information is not difficult to obtain.

Perhaps you are thinking that this is a job for the guidance counselor. Technically, it is. Consider, though, the work load of a guidance counselor. He is responsible for scheduling, achievement tests, record keeping, and probable discipline. He just does not have the time to counsel adequately. The person working in parent education will have much contact with parents. The resulting discussions away from the school setting are always centered around planning the future of the deaf teenager. After all, our major concern is to prepare our students for the future. Perhaps the best preparation we can give is that of independence.

Preparation for independence becomes the second critical area of any education program for parents of secondary students. Here we are walking a fine line. There are those parents who are extreme in their thinking about their child's independence. We must help Mom and Dad move away from the extremes. We need to help them find that middle of the road way of thinking. Too much independence can be as detrimental as not enough independence.

Too many parents tend to be over protective with the deaf child in the family. Some educators, too, see the handicap first, the adolescent second. How often do all of us view a behavior pattern as being caused by deafness? In most cases, this behavior pattern is one of adolescence. Adolescence is perhaps no more important a stage of development than any other, but it is the last stage before adulthood and it offers to both parents and teachers the last opportunity to educate a child for his adult responsibilities.

In the difficult evolution from dependent childhood to independent adulthood, each individual must find a satisfactory answer to many important problems. Of these many problems, four appear to have the most importance to our discussion. Our adolescent (1) must be weaned away from home/dorm supervision to self supervision; (2) he must achieve economic and intellectual independence and learn how to use his leisure time; (3) he must make new emotional and social adjustments to realities he will insist on experiencing himself; (4) he must begin to evolve a philosophy of life. To sum it all up, the main business of being an adolescent is to stop being one!

For this to happen, both school and home must work together. Neither can succeed alone.

Starting from the bottom of our list, we find that our adolescent must begin to evolve a philosophy of life. He should make a beginning in the development of a point of view concerning the world about him. Sometimes such an integrating attitude toward life is religion, and sometimes not. The deep abstractions of religion are very difficult for many deaf children to incorporate as part of self. Sometimes the integrating attitude toward life is completely materialistic. A basic point is that we must assist the deaf child to form an integrating attitude toward society in a positive manner. In addition to influencing a good self image as a start in this respect, we must bend our efforts to enable him to make comfortable compromises with the problems of life. There are an abundance of negative influences, of course. One that I consider most serious is coming from some of the contemporary Pied Pipers in our profession leading deaf children with a siren song of hate and disrespect of all hearing people. That fine line is needed here, also. We need to help the adolescent find that line. To learn to weigh and balance. Whatever, he needs to develop some consistent attitude that will give life a positive meaning. He must acquire ideals and general principles of conduct. He needs to find his place in the world. Naturally, it is only the most precocious of adolescents who enters the adult years with a coherent philosophy of life or with a complete set of ideals. A beginning is all one can expect, but as an adolescent nears adulthood he should start to select whatever values he can find to give life a meaning for him. Attitudes toward these values are constantly changing. Peer influence is by far greater than parental influence but, parents do help in value selection.

Let me mention just one area of value selection in which a parent educator can have a vital role. This is in connection with drug abuse. A parent educator can be a resource person. At this time, it is easy and inexpensive to develop a comprehensive resource file. We have been developing a file such as this for two years. The file is open to parents. We disseminate much information from it upon request. The file is now being centered on information that will be helpful to parents in discussing the dangers of drug abuse. Note the word choice . . . discussing. Not preaching! One of my biggest goals is to help parents realize that honest, factual discussions will go much farther than moralizing, preaching, or forbidding. This entire area of adolescent drug abuse is very much parent centered. Realistically, the parent involvement needs to start long before the adolescent is confronted with the problem. I am sure that you are familiar with the philosophy that drug abuse is the symptom, not the disease. Many times, the disease is a poor relationsip with the family. Therefore, this statement made by Raymond Gamble, Executive Director of the Mental Health Association of Palm Beach County, has become my credo for drug abuse education: "There is a question about whether anti-drug work ought not to be centered on adolescents and their relations with their parents without specific reference to 'drug abuse programs'." This all points up to that very fine line of independence that we must help parents develop. Too much independence would be indeed detrimental. Complete dependence will only serve to confuse the adolescent more when he is trying to develop some kind of value system.

A second problem our adolescent must solve is that of making new emotional and social adjustments to reality. This is a problem for all adolescents but it is perhaps a greater problem for the deaf adolescent. This is one of the most difficult problems facing a residential school environment. Group living always entails more rules for health and safety than small family units. It makes no difference if it is a scout camp, a Boys' State Convention or a dormitory. When rules are necessary, explain why. The very fact that peers have more influence on each other than adults, can be as profitably used in dormitories as it is in the classrooms. Explain problems. Let them come up with a rule. Ninety-nine times out of a hundred it will be the same rule that would have been dictated to them. Every residential school should examine each and every restriction on students to determine if it is really necessary. And the god-awful group punishment techniques have got to go by the wayside. Any rule that restricts freedom of movement and the opportunity to experience self-determination simply to serve the convenience of staff—or parent—is a direct contribution to produce another welfare recipient or deaf peddler. And can't we do something about this "free-for-the-deaf" lie we perpetrate? Free books, paper, pencils, movies, proms, ad nauseam!

One day he graduates and the next day he is "out in the world." He is confronted with demands that have never before been made of him. He is 'free." No rules. No orders. No bossy deans. No time limits. And, no free ride. It is now pay-as-you-go. We parent educators need to work hard with parents to help prepare our adolescent for this confrontation.

The preparation is fairly obvious. Our laws are rules which must be obeyed. Time limits are in existence. Stores have limited hours. Parking meters. Doctors. Dentists. Traffic courts. Restaurants. And life itself. Anyone who works must follow orders. We, as parent educators, must help parents instill these ideas in their deaf child. The middle road is essential. Too much independence will not allow the adolescent to fully appreciate all the responsibilities of living in reality. No independence means the same thing. If Mom and Dad do all the thinking, the adolescent will never develop the responsibility of following the demands of the world. This is especially true in connection with the reality that we live in a pay-as-you-go society. The adolescent needs to be taught that things must be paid for. Simply keeping him informed of the cost of running the household, clothing, gasoline, etc., should be a step in the right direction. We do much of this with our consumer economics program at school. Factual costs are discussed. Budget planning is done. The necessity of planning before spending is hard hit. But, if parent's don't reinforce this, the school's work is lost. We parent educators need to continually stress the importance of such learning experiences at home.

Problem number three closely dovetails with numbers one and two. That is the problem of achieving economic and intellectual independence and learning how to use leisure time.

No one is truly an adult until he earns his own living. We need to help in this effort. The beginnings of economic independence include four major things. Our adolescent must have a reasonably accurate estimate of his abilities. He needs to select a field of work in which success is possible. He must then complete enough training to get started on his career. Most important of all, he must realize the need to work.

In the intellectual area, there are certain objectives to be achieved. Some individuals do not ever develop sufficient mental ability to reach these objectives, but the majority of adolescents could, with training, make more progress toward them than they sometimes do. Three vital intellectual aims are: (1) a general questioning of opinion and demand for evidence; (2) desire for knowledge, especially explanations; and (3) awakening of interests and narrowing of these interests. As our adolescent grows older, he should become unwilling to accept statements on the basis of authority alone. He needs to start seeking evidences and explanations. This is important to his development of a value system. Again, too much independence could be disastrous. Equally disastrous could be total dependence in this area.

The bulk of the responsibility for economic and intellectual independence lies with the in-school program. After all, that is the purpose of school, isn't it? Yet the school cannot succeed in this effort by itself. Parents must help. Parents must take more than a passive role. We've all heard the pleas and made them often enough . . . encourage Johnny to read . . . find Jane a hobby . . . give them an allowance. Simple? Yes! But, we parent educators sometimes need to give parents other specific ways to do these things. One suggestion I have used often that meets with a good deal of success is that of vacation planning. This encompasses economics, intellectual exercise and leisure time planning. Let Johnny find information about the places you will visit. Let him help with the route mapping. Let him help with the budget. Make him responsible for earning his spending money. And let him be instrumental in the planning of your use of time. Simple and effective. As always, the middle road needs to be travelled. No extremes can be tolerated here. Let him have no independence in the trip planning and you may well have an unhappy travelling companion. Give him complete independence and you may have chaos.

The fourth problem in our inverted order is obviously the culmination of all the adolescent is trying to become. That is the process of evolving away from home/dorm supervision. A boy or girl enters adolescence with a dependence upon and attachment to the home and dorm. During adolescence he must substitute independence for these childish relationships. Emancipation from home ties is necessary because the adolescent will never be a real adult as long as his parents or supervisors make his decisions for him, protect him from unpleasantness, and plan his daily life. In most homes the children grow gradually away from the parents, but in some homes the ties are too strong to be broken easily. One of two things then happens. Either the adolescent stops trying to grow up and remains content in the security that his parents give him, or else he revolts violently, and often unintelligently, against the restrictions of his home or dorm.

Parents of teen-agers have to realize that they are no longer dealing with young children. They must realize that sometimes it is necessary to get out of the house to learn. Because at home Mom and Dad are still raising children. Turning on the bathe water, organizing Little League games, driving the kids to school, offering options and instant gratification, removing frustrations, never leaving Johnny alone, and in a thousand little ways paralyzing him, proving that they, the parents, are needed.

The average parent tries to anticipate, accept, and adjust to the behavioral changes that take place in his offspring in the course of development. This adaptation comes harder to some parents than to others who are more flexible. However, all parents experience some degree of anxious tension, since they have not traveled the same developmental pathway or incorporated the newer elements that come into the family with the contemporary adolescent. Even the more enlightened parents are surprised by the size of the generation gap when they go out of their way to agree and understand, only to be confronted by that puzzling and infuriating comment, "You don't understand!" The gap has reached such proportions that parents, out of empathy if not sympathy with adolescence, have almost abrogated their parental rights to decide anything for their children. This is perhaps the parent educator's biggest problem. It is essential that we reinforce the idea that this "You don't understand!" is a cry of the adolescent. Any adolescent. Not just a deaf adolescent. Yes, we have compounded problems. The fact that Johnny lives at school. Communication is a problem. Limited job opportunities is a problem. But parents still need to be parents. They need to guide, explain, support, restrict, and love. And always keeping in mind that fine line of too much or too little!

The job of parent educator is to lead parents into following the theory of "Let each become all he is capable of being." This motto of the State University of New York is one that can only be attained if we walk that fine line . . . enough independence to become a useful citizen but enough dependence to understand that "no man is an island." The foundation for all I have mentioned is our responsibility to teach parents to communicate with their deaf children.

Obviously, the first step in communication is to help the parents establish some mode of communications system. I have spent a great deal of time explaining to parents the necessity of writing letters and notes in very structured, simple language, with pictures, if necessary. Yes, even to parents of secondary students, this is an important tool. Manual communication is also a must in most cases. Even if Mom and Dad can communicate with Johnny without manual communication, it is important also to communicate with Johnny's friends. Fortunately we have a very strong Parent Teacher Counselor Organization at ISD. This group has established a manual communications program. Through this, we are able to meet the needs of many parents by offering sign language classes not only in Indianapolis but in other areas of the state. This past year more than seven hundred people were part of this program. True, not all of them were parents but many were. It has been exciting to me to teach these classes and then to have a deaf youngster come to me and say things like. . . ."Thanks for teaching my Mom . . . Things are really better around my house . . . I think Mom and Dad understand me a little better." Communication. The only way that anyone will ever be able to help an adolescent. Any adolescent.

Before I close, I'd like to share with you a few minutes of reflection on a "happening" that we had at ISD in April of '72. This was a Parent-Student workshop initiated and planned by the Jr. NAD with the cooperation of the Parent Education Office. The theme of this workshop was "Understanding through Cooperation" and it was geared for the parents of our high school students. It was an all day workshop, starting at 8:30 in the morning and going through the evening hours. There were three keynote speakers, a panel discussion and then small discussion groups interacting on various topics.

The keynote speakers talked on the theme of parent-student relations. The panel discussion was concerned with total involvement and included people from education, dormitories, deaf adults, high school students, college students, and parents of deaf children. The discussion groups were moderated by an expert in that area of discussion. The topics for the groups were: post secondary educational programs, dormitory living, total communication, language problems, parents' and students' roles in developing better understanding, and why should we be united and how can we unite.

The workshop was attended by approximately 300 people. Around 100 of these people were parents. The response was good and certainly much discussion was aroused. Mistakes were made as always. If this workshop is to be continued, we will profit from these mistakes. It was an exciting day as I am sure you will be able to tell after viewing a short excerpt of the video tape that was made. If you are looking for a tool with which to generate some parent education on the secondary level, the workshop idea can be very beneficial.

Parent education is an exciting challenge no matter what level you are trying to reach. It is an essential part of educating the whole child. It is our moral obligation as educator of deaf children. It needs to be a continual process. If we lose parents along the way, perhaps we need to reexamine our programs. Parent education on the secondary level is possible. And, it is a must if we are going to have independent, productive, deaf adults.

THE GREAT SOUTHWEST RANCH SCHOOL FOR THE DEAF, INC.—A NATIONAL DREAM

Antonio T. Iannarone, M.A., Tuscon, Ariz.

Thank you for inviting me to be here and giving me the opportunity to share a little bit with you about myself and my dream; the Great Southwest Ranch School for the Deaf.

Webster defines a dream as a series of thoughts, images, or emotions occurring during sleep; an imaginary vision or a reality of such a vision. For many years a school such as ours has been the dream of its founders and only now is the mist that so often covers a dream, beginning to clear. Clearing so that a dream may become a reality and mere existence may become life in its fullest, for so many of our deaf children who have for so long been the neglected minority of an all too silent larger minority.

The school is a response to a need which has for too long been neglected on the national level. As a Department of Health, Education and Welfare official in Washington, DC said recently, "we do not have any facilities (in the entire country) that are willing to work with emotionally disturbed deaf youngsters." It is to these children that we hope to bring life rather than the mere existence of remaining constantly at home or possibly being remanded to a state or county mental institution. It is to these children who have been unable to adjust to existing schools and programs for the deaf because of their special emotional and behavioral needs that we come to try to offer the alternative to being homebound or institutionalized.

The philosophy underlying both the school and everyone connected with it is that "we care" personally for the children that will attend our school. This is to be the basis for the section process of all staff, teachers and counselors. This concern will be spread through the use of total communication by the entire staff as well as the student in all activities. The staff will have an understanding of the special problems our children face and be able to encourage and inspire each child to the fullest use of his or her ability and potential.

The academic curriculum will be highly individualized; centered around the interests and needs of each child. Each child's program will not be determined before the child has had the opportunity to adjust to his new setting and environment and also not until he or she is thoroughly and appropriately evaluated in terms of his or her particular abilities. The one pervasive factor underlying the whole curriculum is that of communication with the children. For us this means the complete and exclusive use of total communication. As Dr. Larry Stewart was recently quoted, "I believe that people learn through different channels, and total communication gives a child the opportunity for maximum freedom in this respect. Hopefully he will learn to understand others more completely." To this, however, Iwould like to add that they not only learn to understand others but also themselves more completely.

In the highly complex society in which we find ourselves today, the expression of rat race takes on double significance with the high pace at which things occur and pass us by. The children in all our academic settings find themselves under a real pressure to produce or perish. It will be these same pressures that we would hope to remove from the child, as much as is feasible, especially in the early days of his enrollment. The pressure to perform and produce will be alleviated, allowing the child to proceed at his own individual pace. This can only be accomplished by the guidance of competent and understanding personnel.

Classroom instruction will be offered in the traditional 3R's and mathematics, science, language, literature, etc., but not in the traditional fashion. At the Southwest Ranch School for the Deaf we will present any and all materials to a child that he or she can handle and cope with but in a fashion that is realistic and relevant to the child in terms of his or her own particular needs. There exists opportunities for a wide and varied range of physical activities, including horseback riding; hiking; back packing; volleyball; ping pong; shuffleboard; and year round swimming in our heated swimming pool. Husbandry interests will be introduced and encouraged through the caring for the horses, burros, pony and dogs. Each child will have the option of having a small garden plot or working on a larger, more complex farm type arrangement. Basic facility maintenance such as carpentry, plumbing, electrical work, auto mechanics, and food preparation will provide some of the older boys and girls the opportunity to develop prevocational and work skills.

One truly impressive feature of the Great Southwest Ranch School for the Deaf is its location. The school is a short 30 minute drive from the downtown area of Tucson and the multivaried activities that often come to the Tucson Community Center. In less than an hour drive the children and staff can be walking the streets of Mexico or the High Chaparral Ranch at Old Tucson, a well known television and film center. The school is less than a 30 minute drive from two of Arizona's leading medical centers, Tucson Medical Center and the University Hospital. Student teachers and counselors, under professional supervision, and many other innovative people are a mere twenty minutes away at the University of Arizona which also boasts one of the more advanced Rehabilitation Centers in the country. It is also here at the University Rehabilitation Counselor Training Center that Dr. Larry Stewart now heads, if you will pardon my bias, the best training program in the country for the production of counselors trained to work with the hearing impaired and deaf individual.

If you will return with me to my analogy of the dream that I used in my introductory section, it will be brought to mind that there is an inherent downfall to every dream—the waking to reality. With this waking the dream is once again pushed back into the unconscious not to be reborn again until a later dream. We too have also had our awakening at our school and, so to speak, the mist may close in. Referrals and applications have not come in as we had originally expected and our high overhead is quickly causing us to look elsewhere for some means of support for our facility. At the present time we are negotiating with the State of Arizona to utilize part of our facility as a half-way house for young, first time, juvenile offenders from the State Industrial School at Fort Grant, Arizona.

Many of the weekend and evening activities such as trips into Tucson, outings to a movie at the Gallagher Theater on the beautiful campus at the University of Arizona will be more of a regular occurrence so as to expose our children slowly to the reality of the world as it is. Time permitting, trips to the nationally famous Arizona-Sonora Desert Museum, Mt. Lemmon, where picknickers and nature lovers of all types find a complete change from desert living, and the Kitt Peak National Observatory will be planned and arranged for our children.

Counseling and therapy will be offered to the children at our school on a continuing and regular basis. The younger children will become involved in play-therapy situations with a trained therapist. For the older children therapy will be administered with an emphasis upon developing insight into their particular problems and needs. Particular emphasis will be placed upon increased personality awareness, integration and coping skills. These services for our children will be provided by professional counselors who are trained specifically in working with the deaf.

The physical facility, once an operating guest ranch, is located in the foothills of the Catalina Mountains with an unimpaired 50 mile view of the valley below. The territorial style buildings sit on 27 acres of raw desert land adjacent to the 2.5 million acre Coronado National Forest which is available for hiking, camping and horseback riding. The main lodge has a large dining hall, kitchen, and lounge which will serve as a library and room for group activities, including therapy. The children will live in what we call living units which will house three to four students each. Each unit has its own adjoining bath providing more of a home style situation. In addition to this the children will be exposed to ranch animals such as horses, burros and ponies and learn to care for them. Also horticultural skills and projects will be developed and encouraged.

This program would be phased out once we were able to enroll a sufficient number of our emotionally disturbed deaf children. So as the number of deaf children increases we would correspondingly decrease the number of our boys from the Industrial School. Needless to say we are in need of referrals but here a word of caution might be in order to heads of existing programs: close observation and careful, timely, accurate and totally communicated diagnosis and evaluations of all young children is so important.

Another awakening to reality came when Dr. Larry Stewart, due to his pressing duties and responsibilities at the University, was forced, for want of time, to resign as director of our school. He has, however, consented to stay on as a consultant to the various programs that will be developed.

So a dream is being altered and is fighting for existence. Time and money are pressing needs, admittedly across the country in many programs, but we are trying to fulfill a long standing national need and with help may see our dream, life for the emotionally disturbed deaf, become a reality.

I have given you a fairly comprehensive look at us and our program and now open this session to suggestions from you all.

THE MATH LEARNING CENTER: A VIABLE CONCEPT IN LEARNING

J. Michael James, teacher, American School for the Deaf,
West Hartford, Conn.

I believe the most innovative and promising educational program to come to the American School since its founding over 150 years ago to be the Math Learning Center. As you probably know, A.S.D. was the first permanent school to be established on this continent. And, as with any school, we have many proud traditions both historically and educationally. We are constantly seeking improvements to our tested and proven programs. But, what is even greater is the American School's acceptance of the challenge of establishing, on an experimental basis, new programs. The Math Learning Center is such a program.

At first, the M.L.C., the young upstart of an idea, accrued careful scrutiny before it was given a trial. After a year of operation it represents a very unique learning situation, now well on its way toward becoming a part of the "tradition" of A.S.D. The Math Learning Center as a concept in learning has opened new doors of thinking at the

American School. Having "seen the light" of individualization, it is difficult to conceive of accepting anything less for our students. Improving the program. That is where we need to focus our attention.

The M.L.C. is the first attempt at our school to give entire classes individualized instruction. For the first time, an all-out effort was made to meet each student at his level and give the opportunity to progress at his own rate. For the first time, students were expected to assume the brunt of the responsibility for their learning. It is this *acceptance of responsibility* which will be the resounding theme of my talk.

In its first year (after the newness wore off) the M.L.C. proved to be a sore spot for some and a place of diligent work and accomplishment for others. Success or failure seems to depend on a certain quality within the individual—a quality of initiative, or self-startingness. What it all boils down to is one's ability or inability to accept responsibility. Those who have it do well, those who do not will fight it with their dying breath.

In its first year the M.L.C. was a learning experience for us all. Most of all we know what the bugs are. Now, to get them out. Hopefully other schools will profit by knowing our mistakes. So at the risk of sounding negative, it is the problem areas on which I concentrate now.

This year I was given the best classes of all the high school grades; that is 9A, 10A, 11A, and 12A. But for all their academic accomplishments, they still could not read. Well, reading ability happens to be a condition of the Math Learning Center. And so, after much sound and fury, prompting and prodding, many of my students undertook the challenge of actually picking up a study guide and reading it for understanding. I think that they were amazed at their own ability to read and follow directions.

It was agreed that the first year I would have 20–25 students—just until we got this thing off the ground. This did not prove to be a popular, nor feasible idea since the other student-teacher ratios around the school were more than double that. Also, with the ease of scheduling into the M.L.C. it was not uncommon to acquire a new student now and then who was either kicked out of one math class, or as a "last resort," or just entering school and unable to find a more convenient math time slot. For various and sundry reasons I ended the year with 60 students instead of the 25 I wanted.

The students' loudest and most regular complaint is that they want more teachers to help them with their problems. That, I feel, is a very valid and encouraging request.

The modules we use with the exception of the Pre-Algebra course were developed by the folks at NTID for a more select group of students than the average at the high school level. These are too difficult for some of our students. With the cöoperative effort of several schools, the study materials can be better adapted for high school use. They can be broken down into smaller units, more examples given, and clearer explanations made. For anyone writing individualized materials, I would recommend limiting the contents of each study guide. Make it short and sweet. Toss in an occasional cumulative review of past materials covered. Repetition is still a good teaching device, and so I do not worry when I see some overlapping between the Algebra I and Algebra II courses.

It is my conviction that in the M.L.C. the serious student can succeed . . . that is, if his study habits are good. However, it has been my experience that hearing-impaired students, in general, have poor study habits. We educators do not expect or encourage them to learn good ones.

My students, like yours, do not read well. They do not keep notebooks as references. The residential students do not study as we would like in the dorms. I doubt that their home study situations are any better. Extracurricular activities often come into conflict with homework requirements.

My first two years I spoon-fed mathematics to my students. This year I did not, and they fought me. The transition is a tough one to make. Imagine your own reaction if suddenly you are given the responsibility for your own destiny in a certain area where you never had it before. This is a problem that we must understand in dealing with student attitude toward the M.L.C. Next year they will know more what is expected of them, and I expect greater success.

In comparing student attitudes, it was apparent that the 9A students were more favorable toward the M.L.C. than the underclassmen. Ninth and tenth grades made more positive and constructive criticisms, worked harder and showed the greatest gain. Attitudes deteriorated rapidly in the 11A and 12A classes. This indicates that the older, more set-in-his-ways the student, the less susceptible he is to change and taking on the responsibility for his learning. The implication here is for early introduction of this kind of learning. We are extending the M.L.C. to the junior high school next fall with the belief that having been "brought-up" on individualized instruction will help give the student a better chance to succeed on his own.

I will end by making three definitive statements: (1) I would not go back to a traditional approach to teaching, (2) the M.L.C. is a concept, which has implications for other subject areas in the high school program, and (3) we need at least three more years to show what our freshmen, reared on the M.L.C. concept, can do.

EFFECTIVE TEACHING VIA DRAMA

George Wm. Johnston, M.A., assistant research scientist, Deafness Research and Training Center, New York University, New York

Introduction

Good afternoon my fellow teachers, educators, parents and friends. National conventions are the best, if not the only, way we can get together to share and cherish our findings, experiences, and opinions. This is especially important in the field of deafness since we are scattered all over the country and hardly see each other very often. It is a blessing that we have printed proceedings available. The proceedings will last longer than our speeches in the presentation form and it will reach more people than I will reach this afternoon. The readers will also have more time to digest it, but for us, we have less than an hour.

I have decided to write a heavy paper full of quotations and specific details. It is entitled, "Effective Teaching Via Drama." I will distribute copies to you this afternoon, however, I doubt I have enough for all of you. Those who do not get a copy can still get one from the proceedings. One thing, I am not going to read out this paper word for word. In my presentation this afternoon, I am going to do what the paper cannot do. As I discuss the importance of utilizing dramatics while teaching, I shall simultaneously practice what I preach. Therefore, my speech will be full of demonstrations and tactics—some from my past efforts and some impromptu. I believe this will make my speech more interesting, pleasant, and indeed, worthwhile. Besides that, I am sure you will remember it more thoroughly.

Dramatical presentations are the best ways to reach a class as well as an audience. Drama is more appealing, more stimulating, pleasant, and often more accurate. It can do what a book cannot do. Besides all this, it brings an amazing degree of rapport between the speaker and the receiver. It brings warmth and some sort of love. It replaces those puzzling negative facial expressions with smiles and even laughter. Drama helps people retain what they are taught or told. Deaf children often miss the dialogue present in everyday conversations. They, therefore, like comics because comics bring these situations back and help them *see* what was said. I am all for comics for all students, but the contents of the comics should be the subject matter we are teaching. Deaf people use drama every day in their lives. Shakespeare said, "All the world's a stage and all the men and women, merely players." But it is to a greater extent with the deaf. I have no statistics for this, but I have seen this throughout my whole life. Dr. William Brelje, Professor at Lewis and Clark College in Portland, Oregon, wrote his doctoral dissertation at the University of Portland, entitled "A Study of the Relationship Between the Articulation and Vocabulary of Hearing Impaired Parents and Their Normally Hearing Children," 1971. From this we might be able to measure the effects of drama on teaching. Deaf parents' children have high accomplishments. I'll bet many do even better than hearing children of hearing parents.

To justify my teacher certification, I shall speak vocally and sign at the same time. If you have any questions, jot them down and I will be happy to answer them when I finish. Ask anything. Questions do not scare me, they help me and others, too. Here I go "trying to put a lifetime experience in one hour".

OUTLOOK

For years it has been said that teaching deaf students was no simple task. Educators today say that one of the major problems is teaching language to these students. (Moores, 1970) This implies that teaching all subjects to the deaf is a complicated task since all subjects rely upon language.

Teachers of the deaf have tried many, many techniques, approaches, procedures, and strategies. No one seems to have come up with a typical strategy which has been realized as the most effective. Psychologists and educators cannot pin-point a favorable strategy which teachers could adhere to for continuous success.

Deaf pupils, students and graduates often refer to deaf teachers of the deaf as their favorite teachers. In addition to this, administrators have often put deaf teachers with the most difficult classes . . . classes such as slow, retarded, or language deprived ones. The logic cannot be that deaf teachers seem more effective because of their deafness. It could not be just that nor the fact that they use signing because many of our hearing teachers can sign real fluently. This thought, with the fact that many retarded and slow learners do not know enough signs is sufficient to refute the logic. This leaves us to ponder around the notion that there may be something in the teaching approaches of deaf teachers which is being overlooked. Many young students who have chosen hearing teachers as their favorites, seem to select those who are proficient signers or those who are sort of active and expressive in nature.

Teachers of the deaf are scattered all over the country and they cannot possibly be using an identical teaching method or procedure that would coincidentally be identical. There must be something effective in the presentation of lessons of these favorite teachers that quite absorbs the attention of deaf students. There must be some motivational factor.

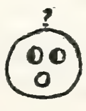
From my direct experience in teaching and working with the deaf, I suspect that a possible factor might be the inclusion of more intentional dramatics in the communication process while teaching. In other words, the teacher who avoids the deadpan personality, the teacher who signs all the time, the teacher who moves his body frequently, the teacher who acts out examples and the teacher who very often shows joy in his teaching is the one who is favored. These teachers are providing effective teaching because Woodruff (1962) states that "a student's feelings about school are a product of his successes and failures in school." Harley Z. Wooden, former Executive Secretary of the Council for Exceptional Children, said (1962:155)

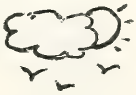
> For example all teachers of the deaf have long tried to develop language in their pupils by building it on illustrations and immediate experiences. . . . However, this has been done without much consideration for the great volume of dramatization that is required to teach language even to the normal hearing child.

What I feel is that there needs to be more effort put into the presentation of lessons. An increased amount of drama should be used. Many teachers do imply drama, but it is a matter of degree, a matter of to what extent they use it. The greater usage, the better. This means that drama should not be used only for one step in your procedure, but in all steps, in the communication process and in the whole period or class hour.

I know very well, that many teachers would jump at this. A spontaneous outburst would be, "But I am no actor." I am not trying to say that you should be professional actors, but at least do some acting. This is also the case when teachers are encouraged to draw pictures for examples. They usually shout, "But I am no artist." The point is that teachers can draw simple sketches. They can learn to draw these to clarify many items in their teaching.

These:





are simple and do not require art courses, nor anything like that. With drama, teachers can ham out little examples. There is no need to feel silly. Teachers do not make fools of themselves, especially by acting. Remember learning is fun, learning is play, learning is work, and vice-versa for each. Learning is motivated by enjoyment.

Taking a Look at Drama—What it is—Its value—Research

We say "effective teaching via drama", but do we consider drama a teaching *method*, teaching *device*, teaching *technique*, teaching *aid*, teaching *approach*, teaching *procedure* or a teaching *strategy?* Since there is not one way to act, and since drama is usually a natural way of life, I feel the most general term we should use is *strategy*. Identifying drama as a teaching strategy allows it to be a general idea of all the other terms together. However, it might be worthwhile to take a look at what Ralph K. Watkins (University of Missouri, 1958 : 238) stated :

> In some professional literature there is an attempt to distinguish between a *method* and a teaching *device*. For example, the formal lecture, informal lecture, discussion, panel discussion, and laboratory may be spoken of as a method. The use of parables, anecdotes, dramatization, written reports, and recitals may be characterized as devices or techniques. It is doubtful that the distinction has any great significance. The anecdotes may be characterized as a trick of the trade to serve as a temporary attention-getter. But there can be a method of using anecdotes to relate new learning to existing experiences of learners in such a way that understandings are greatly enhanced and retention improved. . . . One difficulty in identifying named methods of instruction may be ascribed to inadequate and vague descriptions in the literature of teaching.

Dramatics might be looked upon as a blend of formal acting, body language, pantomime, gesture, demonstrative talking, facial expression, ideographic signing, formal signing and any type of verbal and non-verbal communication used altogether and intermingled simultaneously for a powerful total impact.

Drama is what amplifies visual aids. Just as auditorial amplification with headphones is important in the classroom, so is visual amplification important. In a typical school auditorium the audience cannot hear the speaker so loud speakers are installed. For deaf students, large TV screens should be installed in the back to amplify lip-reading, facial expressions and fingerspelling as well as signs.

Drama is action. Nowadays, children seem to be tied more to television than radios because of the action involved. Therefore a teacher who lectures is like a radio announcer. Teachers today must out-do television, and this calls for drama on their part. Our evidence is that they, the students, would choose a motion picture over a still picture series.

Drama is like providing a laboratory to such disciplines which have no actual laboratory sessions as does Chemistry and Biology. A high school literature class has drama as some sort of laboratory. This should be acting on part of the teacher and the students as well.

When people talk, they usually have a mental picture of some action. The student cannot see these pictures. But when the person acts or dramatizes his statement, he is likely to approximate his mental picture.

Drama is body language. Since deaf students often miss the sound stimuli in their environment, they experience only the actions, especially when no signs are presented. They sooner or later learn to rely on that action of body language. McCay Vernon has already looked into this :

> A rather interesting side to all of this is related to the fact that because deaf people are denied adequate verbal communication with most persons with whom they have interaction including many of their teachers and often their parents,

> they are almost dependent upon reading "body language" . . . they perceive the basic affects, feelings, and essence of people while being denied the verbal or cognitive. Thus, they become astute judges of character . . . The deaf person often responds to the message of the body language.

Vernon furthers his point that "body language" is non-verbal and verbal at the same time. Julius Fast, 1971, explains body language as a new and exciting science labeled kinesics. He says it is a new signal from the unconscious.

In the early infant's life, the smile becomes the significant means of sustaining social contact. (Vernon, 1971.) In the old days, men such as Shakespeare used drama to indirectly teach people things. He pointed out the importance of the play in Hamlet:

> The play's the thing wherein I'll catch the conscience of the king.

Often we see deaf students jump down and "attack" the coach after a basketball victory or sort of "drown" him after a swimming championship. Giving this same action on the stage will break all the students and teachers into laughter, yet at the same time teach the students that such action is dangerous, foolish, unnecessary and quite embarrassing. Often the students do not realize that they really hurt the coach. Drama can alert them when it is skillfully applied.

Drama is pantomine. Marcel Marceau in one of his programme books wrote:

> Does not pantomime convey the language of the heart? Everything can be expressed through the art of mime, which shuns the deceitful words that raise barriers of his understanding between men. Words can be deceitful, but the mime, in order to be understood by all, must be simple and clear, without ambiguity. The Greek author, Lucian, has said that "a mime actor who makes a wrong gesture is guilty of a solecism with his hand."

Marceau states that the art of mime is the form of dramatic expression that appears to be closest to man. It is a *complete* art in the sense that it tends towards an all-embracing definition of the human being. He adds that it is the art of symbols, the art of illusion. It helps identify inanimate objects and expresses the most carefully hidden feelings. Above all, he says the most essential thing is that it is a form of art one might call unassuaged, and the only material it uses is the human being. In other words, drama does not cost anything except time, patience and dedication on the part of the teacher.

Drama brings warmth in the classroom. The teacher, in my opinion, should be a friend of the student. Wilson, et al., (1969) states:

> . . . the teacher should listen much more than he talks, and he should ask questions rather than make statements . . . this way the student tends to reveal himself. . . . As the student is able to see the teacher a friend with whom it is safe to talk, he is most likely to find the teacher a source of information.

Drama depends on experience. High school drama would be different from the elementary level. If Marceau acted like a bird, young children and adults would understand, but if he acted like a drunk in a bar where young children might never have been, they might not comprehend his mime.

Jerome S. Bruner (1963: 82–83) supports drama as a teaching-aid.

> The historical novel that is true in spirit to its subjects, the nature film that dramatizes the struggle of a species in its habitat, the exemplification of an experiment executed by a dramatic personality, exposure to greatness in government by a documentary on the life and service of a Winston Churchill—all these can have the dramatic effect of leading the student to identify more closely

> with a phenomenon or an idea. Undoubtedly, this "aid" in teaching can best be exemplified by the drama-creating personality of a teacher.

In his *The Process of Education*, Bruner states that "the teacher is not only a communicator but a model. . . . A teacher who will not or cannot give play to his own intuitiveness is not likely to be effective in encouraging intuition in his students." (p. 90)

A very important approach to use when providing drama is to establish learning situations. Creative drama is interwoven into the "learning by doing" arguments of Piaget and others. Learning situations are the key to all successful learning by doing plans. "Effective learning, then is learning useful concepts that have applications to the situations one meets in life." (Woodruff, 1962). He continues on page 23:

> In today's complex world unguided experience cannot teach us what we need to learn, so we have organized education to learn certain important things faster and more accurate than we could otherwise learn them.
>
> . . . there is so much we need to learn that we cannot learn it through the slow process of personal discovery.

Acting and dramatics will bring the life situations into the classroom. The deaf student sees situations, but misses the dialogue involved. When the teacher "reproduces" the situation, and signs and speaks out the dialogue, the student has a beautiful chance to catch up with what he is missing. Not only should the teacher do the acting, the students can be encouraged to get into role-playing and role-modeling. What I am emphasizing is that the teacher is the key actor.

When my hearing daughter, Zondee, was about one year old, she would react to all sounds of which I was unaware. She would hear someone knock on the door, but not know how to tell me. What I did was—instead of waiting for someone to come along knocking, I put another person outside and told him to knock. Being aware, I pretended to not know what the noise was. Zondee would twitch and twirl and strive to tell me. I would look under the rug, under the chair, etc., and finally she began to point to the door after I had pointed elsewhere. By setting up the situation, I saved time, and accomplished many other important aspects.

Not only does drama lead to effective teaching on the Primary or Secondary level, it also applies on the adult level. Educators are trying to back away from the old lecture-style teaching. Schein (1970) said, "In our programs, regardless of the ultimate degree to be earned, the students will spend more time working in practicum settings under supervision than sitting in classrooms."

The only opposition to drama I could find in my research was from (Judd, 1915: 387–388) . . .

> A method which has of late come into vogue for historical study is the dramatic method of presenting historical events . . . Students learn a great deal about Roman history from an effort to dramatize Julius Caesar. Their attention is called to details of costume and details of social life which they would pass over if these were merely in verbal form without any clear appreciation of their meanings or exact character. There can be no doubt that the vividness of the dramatic presentation is so great that there is danger of substituting the scene . . . If historical drama is too vivid the student may substitute that which he sees for that which he ought to work out in his own thought. Historical pageant is a substitute for drama . . . it merely reviews the figures involved in historical scenes, giving some of the details of their appearance, but does not attempt to work out in detail all of their activities. There is, therefore, a stronger appeal to the imagination of the student in the pageant than in the drama.

But drama has been supported by actual research. Drama with signing has been shown to be an effective educational technique for children with severe language handicaps including the retarded hearing children. (Bricker, 1972). This is in a way coming up in the *manner* as did the Montessori Method—(surprisingly good for other groups of children.) A study from Ohio State University (Jameson, 1970), showed that hearing children improved in speech ability after given creative drama as a teaching and therapy approach.

Most other studies focused on drama with small children. I will now give you some demonstrations of what has been done on the secondary level, especially.

DEMONSTRATIONS

Drama can be extended from the *classroom* to the small *library meeting*, to a general *assembly program*, and to a *major school play*. Brief set ups can be made for the classroom on any thing being covered. For the library where a few classes of the same level meet, a poem can be acted out by a contributing class. Drama can be a skit or soliloquy or anything for the general school audience. It can also be a Thanksgiving Program for outsiders and parents during a big event. A major play can sometimes be a summation of all classroom and library acting and learning.

To demonstrate, or (practicing what I am preaching) to dramatize some possible classroom and library drama situations . . . let's take a . . .

History class

Teacher can roll her chair from one end to the other to stimulate imagination of Columbus' ship going the wrong way.

Science class

When discussing how atoms come together when cold, and how they go apart when hot—the teacher can use students to personify atoms. They know people come together when it is cold and do not want to be touched when it is hot.

A good way to teach balancing of equations is to turn your back to the class and have the equation on the board higher than you. When explaining, make it like a game. Saying that this one has two atoms it beats this one so this one is jealous (or angry) and must match him (the other atom) and this goes on until the equation is balanced.

Language class

For example, if you are teaching the sentence "I love you" you can dramatize the stress, of which word is emphasized. There are many ways of saying that one sentence. E.g.,

I love you!
I love you?
I love you.
I *love* you.
I love *you*.
"I love you."

each statement can be expressed with proper facial expression, proper signing, and proper body language.

Also for language, you can play with words. To teach the word—*bleeding*, you can act out an example like—"The child was bleeding chocolate." Act as if chocolate is coming down as if it were blood.

You can also play with signs. I told a joke in one of my shows with my daughter, Zondee. I said, "What did the airplane say?" Then we decided that the audience did not know and Zondee signed, "I love you." People started to become puzzled. Then I told Zondee to tell them why. She made the sign of an airplane and lifted it upward—there the sign for I love you was visible, this was the short-cut sign that the deaf often use with three fingers out just as one would sign "airplane."

Literature class

If you were explaining one of Shakespeare's statements such as:

"A man can see how the world goes, with no eyes . . . look with thine ears, See how yon justice rails upon yon simple thief—Hark, in thine ears, change places, and handy dandy—which is the justice? which is the thief?" You can sign and speak this latter part with your eyes closed. It is appealing.

If you were to give a song, like "The Impossible Dream" you might like something unique such as signing in shadow form. Throw a slide of a pretty sunset on a screen and stand in front of it. Your silhouette will be clear and your signs could be grasped. The students will have to know the words to make sure they can follow you accurately. It is interesting and motivating.

Speech class

If discussing a famous man who has always used a pipe; the teacher could use a pipe to sign what is said. For example you can give the sign for headache by moving the stem of the pipe across the forehead. The stem takes place of the finger.

When learning a poem. You can have the class act it out and anyone can be the narrator or singer. Let us take the "Marching Song" by Robert L. Stevenson. Each student can hold a different instrument. Students tend to understand poems better when they see them acted out.

When you want to emphasize a beat of a song they are listening to with headphones, you could actually dramatize playing a guitar. Each strike at the guitar should go for each beat. Show the deaf students which instrument is being used and *how*. Put the tune into your signs and body.

Other ideas to take home

(a) For a student to sign a song, you can set up a box with a loudspeaker underneath and have him stand on it without his shoes. He would be able to follow it better.

(b) When teaching for college preparation. Have actual practice with note-taking. First you do it with an overhead as someone else lectures. Then they can do it one by one as the others watch and make sure you add suggestions. Finally, you give the lecture and they all take notes on a certain topic.

(c) If you feel drama is not possible for you. Try to attend the National Theater of the Deaf's summer program. They will help you and train you to "be a better actor." They have many ideas for teachers.

(d) If you are telling a story. Have the names of characters scattered over the board and point to the name of the character you are dramatizing.

(e) Invite the Little Theater of the Deaf to visit your school. It is a branch of the National Theater.

(f) You can have your Arts and Crafts classes make hollow trees and put holes on the sides. Have a student get in the tree and put his arms out the holes and start to sign as if the tree is talking. Sometimes there is a poem which stresses the thoughts of a tree. This will enhance imagination.

(g) If you have a topic and find that most of the poems relating to it are difficult, try to write up a poem, one that would be easier to read and act out. Here is one I wrote on Columbus for an example.

"It all began when as a lad
He thought the world was round.
He tried at every chance he had
To make his idea sound.

"He thought that sailing West he'd find
The Indies lying there.
And so the Queen of Spain was kind
To give him three ships fair.

"He set from Spain and sailed to sea
Towards West and West and West.
While everyone stayed home to see
If he would pass the test.

"The trip was long and tiresome.
The crew began to fear
That they may never really come
To land he thought was near.

"Turn home, oh Captain, please turn home
The sailors cried each dawn
Nay, Nay, he said, watching the foam
Sail on, sail on, and on.

"At last one day there was a sound
Land ho, land ho, land ho.
And now we're thankful that he found
A land we love and know."

This helps to eliminate some of the difficult words that are hard to pronounce, for example, the names of places, people, etc. This is especially great for classes with language problems. Deaf children tend to not like poetry, only because they do not understand. Once they catch on, you should immediately introduce the other difficult poems.

CONCLUSION

Creative drama may only be successful in an atmosphere of pleasant informality which breaks down fear and tensions. The child should be free to express his thoughts without ridicule or fear. (Jameson, 1970). Burger (1966) sums this up very well by stating, "In this kind of climate, where each is accepted and accepting, love is present."

With your love, with the National Theater of the Deaf, with the National Technical Institute of the Deaf's Experimental Educational Theater which is coming up, and with the Junior National Association of the Deaf's Youth Leadership Camp which brings life situations into group sessions, we have a nice future full of learning, fun, and drama. The students will love you and your teaching will grow in effectiveness, I assure you.

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THE NORTHRIDGE TRAINING MODEL (NTM): BACKGROUND FOR EVALUATION DESIGN

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The Leadership Training Program (LTP) in the Area of the Deaf is a concentrated course in management training which results in a master's degree in school administration. Sixteen persons are trained each year under a training grant from the Rehabilitation Services Administration.

One way of looking at LTP is to consider what happens before, during, and after participants share this training experience. Each category has its own key decision points:

(1) *Before.* There are certain prerequisites to the program. A candidate must have earned a bachelor's degree, must have at least three year's experience with the deaf, and must be approved by an LTP Screening Committee.

The Screening Committee consists of deaf and hearing persons from the LTP staff, and from the community of professionals serving the deaf across the country. The Screening Committee considers job performance, leadership potential, and academic achievement.

Some key decision points in the "before" phase would be:

(a) Publicity efforts to attract qualified candidates.
(b) Make-up of Screening Committee.
(c) Criteria for Selection.

(2) *During.* The program itself consists of cognitively oriented course offerings, an effective experience in interpersonal relationships, and field work. In addition to the staff and faculty, a large number of outside consultants are called in to create an extremely rich training environment. Students also do a graduate project, i.e., a major paper in some area of particular interest.

Key decision points in the "during" phase would deal with the relative contribution to program goals and objectives of (a) academic course offerings, (b) the affective experience, (c) the field work experience, (d) the MA Comprehensive Examinations, and (e) consultants.

(3) *After.* Upon completion of the program participants are assumed ready to accept "leadership" roles in rehabilitation, education, and other areas of service to the deaf.

Key decision points in the "after" phase would deal retrospectively with the adequacy of training as perceived by the graduates of the program and by those who hire the graduates.

A generalized goal, worded to encompass before, during, and after considerations might be stated in this way: The purpose of the Leadership Training Program is to have qualified candidates (before) train in management theory and techniques (during) and to engage in a leadership role upon leaving the program (after). More specifically, the program accepts qualified candidates according to prestated criteria and the recommendation of the Screening Committee; provides a curriculum designed to train participants as leaders, and accepts grades and "pass" credit, and MA Comprehensive Examinations as criterion measures of success, and assists graduates in finding employment in leadership positions in the field of deafness.

The training program itself deals with a systematic approach to management. The Northridge Training Model (NTM) serves as a vehicle to describe this training.

THE NTM

The NTM is a conceptual model used to describe the systematic approach to management which comprises the training experiences of the Leadership Training Program in the Area of the Deaf.

The systems approach, as the term is used here, is a master plan to manage the individual components of the program itself which are:

1. Identification of Needs.
2. Prioritizing of Needs.
3. Stating of Objectives to Meet Needs.
4. Identifying Resources to Support Objectives.
5. Utilizing Strategies to Meet Objectives.
6. Evaluation of Degree to which Objectives were Met.

DISCUSSION

The successful manager, given an administrative problem-solving situation, might be called upon to determine the needs of his particular organization. In the educational setting, for example, he might call together administrative and instructional personnel, parents, and/or students to determine the needs of a school as perceived by these various groups. Brain-storming meetings with those groups may generate a long list of needs.

Since it would not be likely that the school would have enough resources to meet every need immediately, it is necessary to give higher priority to some needs than others. Committees with representatives from each group mentioned above might give greater weight to some needs and lesser weight to others.

Given the greatest need(s), the manager would then generate specific objectives which are designed to meet these needs. He would identify resources currently available to meet the stated objectives and would also identify which additional resources are necessary to meet his objectives.

Given appropriate objectives, the manager would then determine which steps (methods, strategies, techniques) might be employed to meet the objectives.

As a final step, the manager would have generated, in the planning stage, an evaluation design which would tell him the degree to which his objectives were met.

One using this approach to problem-solving would be considered to be using the NTM-systems approach as a management technique.

Our goal of the Leadership Training Program is to have students use a systems approach as a management strategy.

To break this down more specifically, into performance terms, it is expected that the LTP trainee will be able to:

(a) Identify the six components of the NTM in writing.

(b) Demonstrate utilization of the model to the satisfaction of the LTP Director through: Written projects following each field work assignment; an independent study graduate project, and a proposal to a private, local, state or federal funding source.

(c) Demonstrate utilization of the model to the satisfaction of the LTP Director through observation of trainee performance in a simulated administrative situation known as "in-basket" training.

(d) Demonstrate utilization of the model while taking MA Comprehensive examinations to the satisfaction of three Comprehensive Examination Reviewers.

Since the key decision points in the training, or "during" phase are (a) academic course offerings, (b) the effective experience, (c) the field work experiences, (d) the MA Comprehensive examinations, and (e) use of consultants, each is treated separately here in order to demonstrate application of the model across the training process.

ACADEMIC COURSE OFFERINGS

A curriculum in leadership is offered. Each course offering within the curriculum is designed to make some contribution to those skills which are considered necessary in order to evidence leadership behavior.

Four selected academic classes are represented in Figure 1. While most courses touch into most areas of the model, only points of major emphasis are shown in Figure 1.

AFFECTIVE EXPERIENCE

The class in group dynamics and interpersonal relationships is felt to be a necessary part of the training process. Experience has shown that the accelerated pace of the program (32 units in 7 months) and the pressure to succeed (graduates have gone on to the top jobs in the field), lead to some healthy and unhealthy conflicts within and between individuals enrolled in the program. The Group Dynamics Class gives the 16 participants a setting in which they may handle these feelings.

Whereas the components of the model in the academic areas represented knowledge to be acquired about things, the effective experience represents insight to be acquired about people, beginning with an introspective analysis of each individual.

FIGURE 1—NTM MODEL

Application: LTP curriculum	Identification of needs	Prioritizing of needs	Stating of objectives to meet needs	Identifying resources to meet objectives	Utilizing strategies to meet objectives	Evaluation of degree to which objectives were met
SAS 576—School and Community Relations (Lang).	Plan and conduct a community survey.	Community involvement in prioritizing needs.		Equipment and media most used in a community school.	Guidelines for developing and maintaining a Community Council; dynamics of group interaction.	
SAS 551—Program Development (Murphy).	Needs assessment of individual situations; stating of needs in a proposal.	Assigning priorities to needs in each situation; developing a plan to meet greatest need.	Seminar in writing objectives, stating objectives in individual and group projects.	Determining resources currently available and needed to meet objectives of program developed to meet greatest need.	Determining and setting down those strategies needed to meet objectives stated in proposal; systems approach to management.	Evaluation designs; individual design built into each participant's proposal.
H. Sci 472—Community Health Action (Alcocer).					Methods of implementing community health needs into action.	
SAS 562—Administration and supervision (Brill)				Dormitory personnel; teachers; administrators and supervisors.	Administrative patterns; state plans, professional organizations and journals.	Pupil evaluation; school certification.

FIGURE 2—NTM

Affective experience	Determining needs	Prioritizing needs	Setting of objectives	Utilization of resources	Strategies	Evaluation
	What are my strengths and weaknesses; what are strengths and weaknesses of other people?	Which are my strongest points? Weakest points? What are the strongest and weakest points of others?	Setting of realistic personal-professional objectives for self and others.	Who and what can be utilized as resources in setting objectives and dealing with people?	Techniques of dealing with people; with feelings of self and others.	To what degree have the personal and professional objectives which were set for self and others been met; suggestions for improvement.

FIELD WORK

The trainees go into the field for one and two week internships in rehabilitation, education, and community service agencies. They work closely with professionals in these agencies, observing and participating in the typical management problems of the respective agencies. In 1973, trainees will intern in New York, Dallas, and the western states.

Upon completion of each internship, each trainee is expected to present a paper to the LTP Director. The paper is meant to be an analysis of the management strategies of the host institutions. Figure 3 indicates the application of the NTM model to the field work experiences.

MA COMPREHENSIVE EXAMINATIONS

As a requirement for the MA degree, each LTP participant must successfully pass a series of examinations. The examination questions are formulated by the faculty and staff of the program. The questions are general in nature and are designed to determine the degree to which participants have synthesized the sum of their training. A representative question might be, "You are the superintendent of a school for the deaf and it is determined that a preschool program is the most pressing need in your school. How would you go about establishing a preschool program?"

A review committee meets to determine if the examination answers are acceptable to them. Criteria for this review are given in Figure 4.

NTM FIGURE 3.—

	Determining needs	Prioritizing needs	Setting of objectives	Utilization of resources	Strategies	Evaluation
Field work	How has the host institution determined institutional needs?	How were needs prioritized?	What are the objectives of the host institution? Do the objectives reflect priority needs?	What resources are currently utilized to meet objectives? Are the resources appropriate? Has the institution determined what additional resources are needed to meet their objectives or to institute programs to meet other high priority needs?	What strategies are used to meet institutional objectives? Are they appropriate? What other strategies might be used?	Is there an evaluation design? Dose evaluation consider process and product? How does the institution use evaluation to improve their programs?

NTM FIGURE 4.—

	Determining needs	Prioritizing needs	Setting of objectives	Utilization of resources	Strategies	Evaluation
4. Comprehensive examinations	In the answers on the MA comprehensive examinations, to what degree does the LTP participant show that a needs assessment is a part of his overall management strategy? Is the needs assessment appropriately used? Are the techniques of needs assessment appropriate?	In the answers on the MA comprehensive examinations, to what degree does the LTP participant show that needs have been prioritized? Was the prioritizing appropriate to the needs assessment? Were the techniques of prioritizing appropriately applied?	In the answers on the MA comprehensive examinations, to what degree does the LTP participant show that objectives have been stated to meet predetermined needs?	In the answers on the MA comprehensive examinations, to what degree does the LTP participant show that appropriate current resources have been identified? Have additional resources needed to meet objectives been identified? Are the resources appropriate?	In the answers on the MA comprehensive examinations, to what degree does the LTP participant show that appropriate strategies have been identified and that utilization of these strategies will lead to meeting the given objectives?	In the answers on the MA comprehensive examinations, to what degree does the LTP participant show that appropriate evaluation design covering process and product types of evaluation has been formulated? Is the design appropriate? Have key decision points been identified? Will use of this design lead to program improvement? Will the design lead to conclusions about the effectiveness of the program?

CONSULTANTS

The program is able to make extensive use of consultants. Over the years the top leaders in the field of deafness and related fields have visited the campus to share a wealth of experience with LTP participants. A sample of visitors would include superintendents of schools for the deaf, top level state and federal administrators, representatives from specially-funded projects, teacher training, research, audiology, organizations serving the deaf, and journals in the field of the deaf, national politicians, and actors and actresses. Leaders from business, management, and law have also been on campus to share experiences.

In addition, consultants are brought on campus from various academic disciplines. Consultants speak on such topics as the writing of objectives, use of computers in education, relating educational and rehabilitation services, learning theory, and other topics.

By design, consultants are heavily strategy-oriented (in terms of the NTM). The range of consultants does address itself to all parts of the model during the course of each training year, however.

OTHER APPLICATIONS OF THE NTM

While essentially a *training* model, the NTM also serves well as a *planning* model, and an *evaluation* model. The training aspect has been utilized above to describe the process of leadership training.

FIGURE 5.—NTM

Consultants	Determining needs	Prioritizing needs	Setting of objectives	Identifying resources	Strategies	Evaluation
School superintendent, Dr. A (Feb. 1, 1973).			Use of objectives by a school administrator.			
Research audiologist, Dr. B (Feb. 8, 1973)					Techniques of auditory training.	
Management specialist, Mr. C (Feb. 9, 1973).		Topic: "Are you doing what you should be doing?"				
Representative of regional media center, Mr. D (Feb. 15, 1973).					Establishing a media center in a school for the deaf.	
State rehabilitation coordinator, Dr. E (Feb. 28, 1973).				Resources available to the rehabilitation counselor.		Evaluating the rehabilitation client.
Day school principals, Dr. F (Mar. 5, 1973)					Individualization of instruction techniques.	

The overriding rationale for a leadership training program may be examined in the light of the NTM planning ("before" phase) aspect. For example, is LTP based on a needs-assessment of problems in the field of deafness? Who has contributed to the original list? Have the needs been prioritized? How has this been done? Does the Leadership Training Program have objectives which will adequately meet the needs of the field? Have the appropriate resources been brought to bear to meet the objectives? Is the curriculum appropriate to the needs and the objectives? Is there an evaluation design to consider the efficiency and the effectiveness of the program?

As an evaluation model ("after" phase) the same kinds of questions might be raised.

Students and faculty in current classes would react to each phase of the model to test the efficiency of the training.

Graduates, employers of graduates, formal site teams from the funding source, and informal evaluation teams forced by the LTP Director would ask the same kinds of questions to test the effectiveness of the program.

The model may also be used to evaluate individual students. One may ask to what degree have participants demonstrated strengths under the various components of the model.

In summary, the NTM serves as a possible vehicle to plan, program, and evaluate the Leadership Training Program in the Area of the Deaf.

COMPUTER-ASSISTED INSTRUCTION—A TEACHING TOOL

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In recent years the educational goal of individualizing the learning process has been the central thrust of education. Because of this effort to educate each child to his full potential, the role of the teacher has become more demanding and difficult. One challenge to the teacher is the selection of teaching methods and material. Some of these methods to individualize education include team teaching, programmed material, and various applications of the computer. Four areas of direct computer application to instruction are commonly identified as computer-assisted testing, computer-managed instruction (CMI), computer-based instruction (CBI), and computer-assisted instruction (CAI). Distinctions among these four areas are made solely for convenience. At Stanford, the Institute for Mathematical Studies in the Social Sciences has directed its effort toward the fourth area, computer-assisted instruction or CAI.

Emphasis in this talk will be on how this teaching tool—CAI—may best be used by teachers to amplify both their skills and time. First, however, some background information on activities at the Institute, a description of courses being used in schools for the deaf, and the school setting for CAI.

ACTIVITIES OF THE INSTITUTE FOR MATHEMATICAL STUDIES IN THE SOCIAL SCIENCES

Since 1965, when the Institute began supplying CAI through two terminals located in a school near Stanford University, its CAI activities have expanded to 180 terminals handling at least 120 users simultaneously. These terminals serve diverse populations such as schools for the deaf, Indian Pueblo School in New Mexico, and NASA's Manned Spacecraft Center in Houston, Texas. San Francisco Bay Area participants include a community college, and elementary and secondary schools.

The schools for the deaf are located in the states of California, Florida, Oklahoma, Texas, and the District of Columbia and include both residential and day-school facilities. Communication between the Institute's computer system and the terminals in these schools is carried by ordinary telephone lines.

During 1972–73, more than 3,500 students were registered in our CAI system, spanning the educational spectrum from first grade to university level.

DESCRIPTION OF CAI CURRICULUMS: MATHEMATICS AND LANGUAGE ARTS

Through use of CAI in the classroom teachers are provided with a means to individualize instruction to a higher degree than is possible with any other teaching tool. Types of curriculum that are especially adaptable to CAI are those that require a high level of active response from the students such as drill on basic skills. At the Institute we have developed many programs. Two basic-skill programs that are being used extensively in schools for the deaf are a drill-and-practice program on arithmetic computation skills and a language-arts drill program on standard English usage.

The mathematics program was designed to provide a well-planned program of drill and practice in arithmetic fundamentals. The questions used to determine what types of problems a child should receive on a drill were not "What grade is the child in?" and "What is usually taught at that grade level?", but rather "What concepts has this child mastered?" and "What should this child learn next?" This line of thinking led to reorganizing the elementary drill-and-practice material into strands.

Before continuing, however, let me define a strand. A strand is a series of problems of the same operational type (e.g., counting and place value, addition, subtraction, fractions) arranged sequentially in equivalence classes according to their relative difficulty from Grades 1 through 7. There are 14 strands in the program. Each strand is identified by a three-letter abbreviation. Table 1 indicates the first and last class of problems in each strand. Each student in the strands program will work on fewer than 14 strands; the actual number will depend on his grade level and performance. The strands approach provides perhaps the highest degree of individualization to date, because (a) each student's lesson is prepared for him daily by the computer; (b) the lessons are presented as mixed drills at a level of difficulty in each concept determined by the student's prior performance in each concept; and (c) the student moves up each strand at his own pace.

TABLE 1.—MATHEMATICS STRANDS

Strand number	Name	Abbreviation	Grade level First class	 Last class
1	Number concepts	NUM	1.0	7.9
2	Horizontal addition	HAD	1.0	3.9
3	Horizontal subtraction	HSU	1.0	3.4
4	Vertical addition	VAD	1.0	5.9
5	Vertical subtraction	VSU	1.5	5.9
6	Equations	EQN	1.5	7.9
7	Measurement	MEA	1.5	7.9
8	Horizontal multiplication	HMU	2.5	5.4
9	Laws of arithmetic	LAW	3.0	7.9
10	Vertical multiplication	VMU	3.5	7.9
11	Division	DIV	3.5	7.9
12	Fractions	FRA	3.5	7.9
13	Decimals	DEC	4.0	7.9
14	Negative numbers	NEG	6.0	7.9

A student's 10-minute drill contains problems from each strand appropriate to his ability level. A student may be working problems on several different levels from first through seventh grade.

Emphasis in the language-arts course curriculum is directed toward aspects of English that are difficult for the student who, for unique reasons, is severely language deprived. This course was designed and written after careful analysis of language difficulties of the deaf. The resulting curriculum emphasizes the structure of English, particularly the roles of syntax and inflection, the meaning of function words, and idioms. This curriculum, as with the math strands, is not intended as a complete course in English. Classroom instruction remains the greater portion of a student's language experience. The CAI curriculum provides supplementary, individualized language instruction tailored for each student on the basis of his response history.

The language arts curriculum is divided into a library of 214 lessons, each consisting of 20–30 exercises. It is designed for deaf students who read at about the third-grade level, and it provides a year's curriculum with 10–15 minutes' daily practice with standard English usage. The order of lessons provides an expanding basis of interdependent concepts. When a topic is introduced, carefully sequenced explanations are given in a short tutorial section. In subsequent lessons on the same subject, short but complete instructions are repeated. Explicit presentations of rules are avoided; rather, illustrated patterns of English provide practice enabling each student to develop his own understanding of standard English usage.

The other courses developed at the Institute were designed for various school levels from first grade to college. To mention a few, they include: elementary reading, logic-algebra, programming languages BASIC and AID, foreign languages, preparation for passing the high-school-level General Education Development test, and several educational games.

Setting

In a typical school, one room contains 8 to 15 student terminals. One person, who is chosen by the school as the CAI terminal proctor, is in charge of the equipment and supervises students in the terminal room. Usually accompanied by their classroom teacher, the students enter and sit at any free terminal. The terminals are the Model-33 teletypewriters, which resemble electric typewriters and which communicate with computers over ordinary telephone lines.

As an example, at the Florida School for the Deaf and Blind, eight terminals in a separate room in the Intermediate Department are used daily by 183 students for mathematics drills. Each class is scheduled for 10 minutes during the day. The teacher either sends or accompanies the students to the terminal room during that assigned time.

The student starts the instruction by pressing the start key to signal that he is positioned at the terminal and is ready to start. The program responds by typing

```
HI
PLEASE TYPE YOUR NUMBER AND NAME.
```

and the student responds accordingly.

Each student receives a unique number when he enrolls for CAI, so the request for the first name is merely an additional safeguard to ensure correct identification. A student can be, and usually is, enrolled for several CAI courses at the same time. He uses the same number for all courses and types a one-letter identifier to indicate which course he is requesting. In the following example the student is using S, the identifier for the math strands course.

```
HI
PLEASE TYPE YOUR NUMBER AND NAME.
S3456 MARY
```

The program scans the file of registered students, finds this student's last name, and types it. Unless he types special instructions, the student is then placed in his sequence of lessons exactly where he left off.

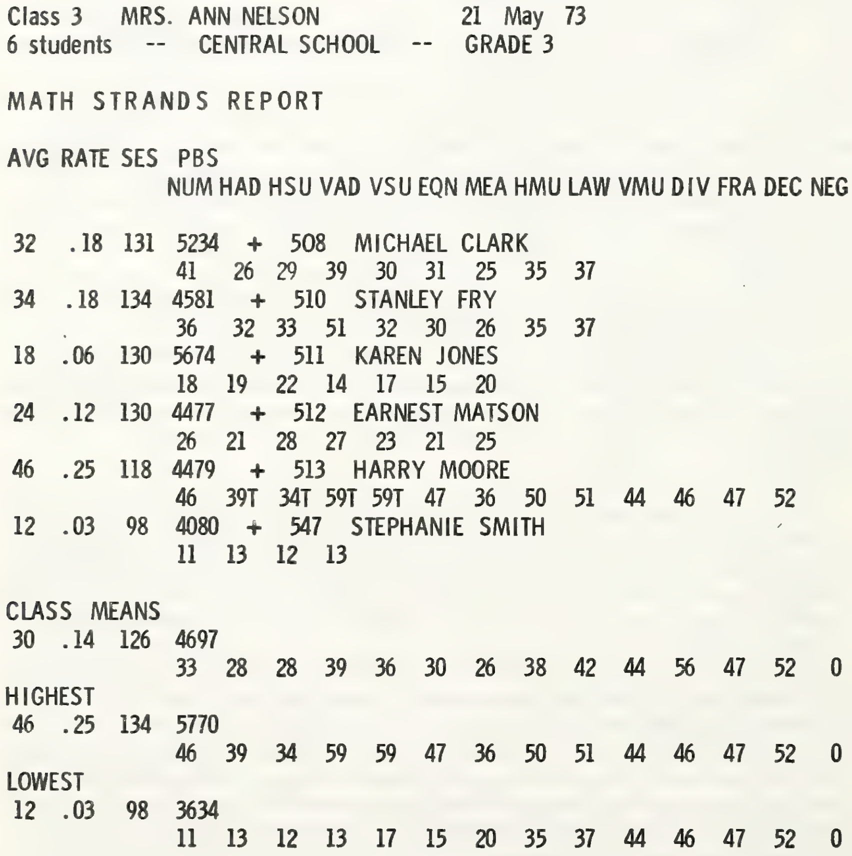
Teacher's use of CAI

How does the teacher use CAI in the classroom? A teacher can individualize instruction in the standard parts of the curriculum and reserve his own efforts for troubleshooting and intensive individual attention. He can also use CAI to assist in individualizing drills, keeping records, and diagnosing the learning strengths and weaknesses of each child.

Because many of you will not be familiar with the rich possibilities that may be embedded in computer programs for instruction, it is important to emphasize the many ways in which a computer program can perform that a teacher cannot. For example, a computer program can prepare individualized student lessons from a large data base in a fashion that would be realistically impossible for a teacher, and certainly impossible when handling ten, twenty, or thirty students. During the student's 10-minute drill at the teletype he is given many more problems than the teacher could possibly present in the same length of time in a classroom setting. By giving the student immediate feedback of correct and incorrect responses, we do not reinforce incorrect methods of working problems. This can free the teacher of the task of creating daily drills in the classroom.

Record keeping by CAI permits the teacher to keep an exact record of each student's daily work on the CAI program without spending many hours keeping books. Because of the storage capacity of the computer, many different kinds of information can be stored for each student.

As an example, the computer can take attendance, indicate problems worked and the number correct, and indicate the kinds of problems that the student has done. The classroom mathematics teacher receives a daily report from the computer's student-history file showing each student's grade-placement level in the math strands. This daily report assists the teacher in individualizing classroom instruction and serves as a diagnostic tool enabling the teacher to identify each student's ability level. Here is a sample of the teacher's daily report on the math strands. Similar reports are available in other courses. As shown in Figure 1, this report indicates each student's average placement, rate,



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Class 3    MRS. ANN NELSON              21  May  73
6 students   --   CENTRAL SCHOOL   --   GRADE 3

MATH STRANDS REPORT

AVG RATE SES  PBS
              NUM HAD HSU VAD VSU EQN MEA HMU LAW VMU DIV FRA DEC NEG

 32  .18  131  5234  +  508  MICHAEL CLARK
               41   26  29  39  30  31  25  35  37
 34  .18  134  4581  +  510  STANLEY FRY
               36   32  33  51  32  30  26  35  37
 18  .06  130  5674  +  511  KAREN JONES
               18   19  22  14  17  15  20
 24  .12  130  4477  +  512  EARNEST MATSON
               26   21  28  27  23  21  25
 46  .25  118  4479  +  513  HARRY MOORE
               46   39T 34T 59T 59T 47  36  50  51  44  46  47  52
 12  .03   98  4080  +  547  STEPHANIE SMITH
               11   13  12  13

CLASS MEANS
 30  .14  126  4697
               33   28  28  39  36  30  26  38  42  44  56  47  52  0
HIGHEST
 46  .25  134  5770
               46   39  34  59  59  47  36  50  51  44  46  47  52  0
LOWEST
 12  .03   98  3634
               11   13  12  13  17  15  20  35  37  44  46  47  52  0
```

FIGURE 1

number of sessions, total number of problems worked, and the level he is working on in each strand. Also included at the end of each report is a class summary.

Because of the availability of the record keeping, the teacher has a powerful tool to aid him in diagnosing the educational needs of his students. In making lesson plans, the teacher can use the daily reports to assist him in his analysis of what the individual student or the class needs to work on, what review is necessary, and what new concepts might be introduced to various groups or individuals in the class. Also, the teacher can use this information for a small grouping of students who need work or extra help in specific areas.

From the analysis of the daily report, a teacher can readily see the strengths and weaknesses of each student. A teacher may find that a group of students are weak in subtraction and thus works with the group for several weeks on concepts of subtraction. To check whether learning has occurred he watches the daily reports to see if their placement in the subtraction strand improves. If it does, then the students have mastered that type of problem and the teacher can plan classroom work in other areas.

CAI can assist the teacher in analyzing whether the students have the background necessary to introduce and work on a new concept. By checking the students' level in multiplication and subtraction, the teacher has a more precise means of evaluating the proper time to introduce division concepts.

The teacher, with the help of CAI, can make review more meaningful in the classroom, since with CAI specific areas that need further work can be pinpointed. One teacher's method is to have each student deposit in a box the problems which he missed on his CAI math drill. Then during classroom work each student takes a problem from the box and works it on the chalk board. This not only generates classroom discussion of the problem, but it also allows the student who made the error to remain anonymous.

In the language arts course the teacher can use the drills for analysis of the student or the class. If the pretest of a lesson is passed, then the teacher can devote classroom time to the introduction of higher level concepts. Specific lessons within the language arts course can also be requested. A teacher may introduce a topic in class, such as plural nouns, and direct students to certain noun language drills that are easily identifiable in the outline of lessons. Also the language-arts review lessons, strategically placed in the course, provide another means of checking individual student mastery of concepts.

CAI can change the relationship between the teacher and student by placing the teacher in the role of tutor instead of disciplinarian and critic. For instance, if questions arise while the student is working at the teletype, it is then natural for him to ask the teacher for assistance when he returns to the classroom. This is the role most teachers visualize, that is, the student assumes the responsibility for his learning and the teacher acts as tutor.

Research on effectiveness

CAI has been in use long enough so that the research on testing its effectiveness is fairly extensive. CAI can be abused, but it can also be an extremely effective pedagogical tool that used properly can present a serious possibility for the improvement of education.

Two studies have related arithmetic achievement to *amount* of CAI, using linear regression models. Jamison, Wells, and Whelchel (1973) analyzed data for over 400 fifth- and sixth-grade students. Their results indicated, for example, that the fifth-grade boys who took 150 10-minute CAI sessions per year, slightly less than one session per day, gained .58 years in grade placement. The gain resulted solely from the CAI intervention independent of any gain attributable to classroom instruction or the interaction between classroom instruction and CAI.

Suppes, Fletcher, Zanotti, Lorton, and Searle (1973) reported a 1971–72 study that provided mathematics CAI to elementary and secondary school students in residential schools and day classes for

312 deaf students. In reporting the effect of CAI on grade-placement gains for this population, Suppes, et al., demonstrated that assuming 150 10-minute CAI sessions per school year, a grade-placement gain of 1.26 years can be expected and attributable to the CAI intervention. In general, this report appears to corroborate the subjective impression of many investigators that CAI is most effective when it is used by students who are below grade level.

Cost of CAI

A promising aspect of CAI is its steady decrease in cost. Currently, CAI offered by the Stanford CAI system costs about $1.50 to $2.50 per student contact hour, depending on communication expenses. During the 1970s we can expect a continuing decrease in the cost of CAI concurrent with a steady increase in its quality. Even now it can be shown that CAI, using satellite communication, is by far the most cost-effective method available (i.e., both the least expensive and most pedagogically effective) in providing compensatory education to widely scattered installations (Jamison, Fletcher, Suppes & Atkinson, 1972).

CONCLUSION

Whether it is CAI or any other type of program developed to assist teachers in their job, teachers need to become knowledgeable about the program. Without teacher involvement and interest, an educational program cannot succeed. If a school is considering CAI, teachers must carefully evaluate their needs and look beyond the glittering technology to the value of the curriculum for the student.

Finally, CAI as a teaching tool can become an integral part of traditional classroom instruction to assist the teacher in those aspects of the cognitive domain, such as individualized drill, that are amenable to computer presentation.

With the assistance of CAI, the teacher can more easily approach the goal of individualized instruction.

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A LANGUAGE ENVIRONMENT FOR THE PROFOUNDLY DEAF CHILD

Margaret S. Kent, M.A. director of admissions, Maryland School for the Deaf, Frederick

The great shame in deaf education is our failure to teach language successfully to all but a small fraction of the students passing through our schools. The immediate response to this pessimistic statement is, "Why, after all our best efforts do we persist in perpetuating so many failures?" All but one per cent of the hearing population, the severely mentally retarded, acquire sufficient language to at least communicate adequately with the people around them. Surely we can do better than that for our deaf students.

Our successes in the past were mainly with students with late onset, that is, having acquired language naturally before becoming deaf. For these students, the teacher of the deaf could not test her metal nor take much credit. Then there were the students with considerable residual hearing, in the category of the moderate to severely hard of hearing. These students profited considerably from the structured approach to language many teachers of the deaf employed. They were not relying entirely on the teacher's in-put for language acquisition. They were picking up language continuously through audition, possibly in a somewhat fragmented manner but the teacher was reinforcing it in numerous ways. These children made progress. Then there were the deaf children of deaf families who knew how to sign when they came to school. These children had an established symbol system in which they were competent, that is, they could converse freely in signs. It was not too difficult for them to learn other variants, speech, speechreading, fingerspelling, reading and writing, as long as they could associate it with their "mother tongue", the sign language.

Today the population is somewhat different. Rarely do we see children deafened later in childhood after language has been established. Modern medicine has all but eliminated that category. The moderately to severely hard of hearing with the help of amplification systems are more appropriately placed in partial or fully integrated programs in public school settings. Although they do not always get the level of sophisticated services to meet their educational requirements, their need to be in a hearing environment is paramount. They should not have to accommodate themselves to learn as profoundly deaf persons in a school for the deaf. Admittedly there are some students with considerable hearing in a residential school. They are there either by default (that is, no local services available to them) or the degree of handicap is such that they need the additional support usually found in a school for the deaf.

Who, then, are all our language failures? They are the deaf children of hearing parents, comprising as high as 90% of a given school population. To each one of these parents deafness is a totally new and disastrous phenomenon with which they are completely unprepared to cope. We have failed to be helpful to these parents but most especially to their deaf children.

Let us trace briefly a typical case history. Frequently, the child's deafness is diagnosed early enough especially in sophisticated urban areas or states in which the local health departments carry on a vigorous child health program. An individual hearing aid is prescribed in the preschool years and nursery school training is begun often as early as age two. Speech and auditory training are initiated. If the child is profoundly deaf, little real progress is noted. The child may acquire a repertoire of a dozen or so words in the course of several years at the expense of great frustration on the part of the child and his parents who become more and more alienated. On admission to school at age four or five this same child finds it very difficult to tolerate any restraints in the classroom and is variously labeled "hyperactive", "disinhibited", "distractible", even "language impaired" which indeed he is at this point. It takes considerable effort on the part of all concerned, teachers and houseparents, to bring him around to any kind of social behavior that will permit him to attend to classroom activities. After a weekend at home the battle for socialization is repeated each Monday.

Where did we go wrong? We have failed on several counts. First of all we have made little real effort to help the parents understand the handicap and learn to communicate with their deaf child. He remains an alien within the family, isolated from the main source of learning to which he has a right as a family member. Second, we have relied completely on professional resources outside the home to solve a problem which is more appropriately resolved within the home by family members who can learn to be the most effective life-long teachers a deaf child will ever have. And third, we have assumed the efforts to develop a small repertoire of words in any form—speech, speechreading, audition, or any combination is language. It is not.

Language is the means by which man encodes and decodes meanings with signals or symbols. If language usage is to be learned efficiently it must be based on the functional use of language, that is, communication. All language know-how is acquired not through formal teaching or structuring or programming but as children learn to use language to serve themselves as they operate on the environs of their social-cultural world. (Stauffer, 1970: 6)

From a linguistic point of view language may be viewed on two levels—language competence and language performance. (O'Malley, 1972: 4) Competence is described as the ability of the language user to produce and understand a potentially infinite number of sentences. Competency is only possible after mastery has been attained. On the other hand performance implies what the language user actually does in any given situation. There may be a great disparity between what a language user knows or can do and what he actually does. Much of the language teaching in the past has been characterized as examples of language performance rather than language competence. Teachers have spent too much time trying to teach about language in the hope that this knowledge would help children become better language users.

How, then, can competency be achieved by the deaf children of hearing parents—those children with whom we have failed so consistently? The answer is an "adequate" language stimulating environment. For a deaf child of hearing parents this implies that the parents have learned to sign as soon as they knew their child was deaf—not just a few family signs but have learned to sign adequately in sentences providing a visual model of the language the child will eventually learn to use through constant exposure and reinforcement. It means that amplification has not been overlooked, that the hearing loss has been appropriately diagnosed and prescribed for so that sound becomes an integral part of the message. It implies that the teacher in the classroom and the houseparents in the dormitory are adequate language models. It also means that these important adults—parents, teachers, house-parents, understand their role as language stimulators. They encourage the child to engage in dialogue, not by constantly correcting him but by attending to what he is trying to say and reacting appropriately to it. In this way the child has the opportunity to fit the pieces together from each meaningful exchange in his own way and learn without censure. It assumes that the teacher will plan classroom activities which encourage a great deal of language expression on the part of the children rather than a teacher monologue directed toward the children whose role is that of a Greek Chorus. When adequate stimulation is provided both at home and at school the child's chances for achieving language competence are enhanced. Hopefully the large percentage of language failures will be substantially reduced.

Who is better suited to perform this function initially than the parents or at the very least one member of the family, even an older sister or brother? With sign classes available in community colleges, TV sign courses, books, films, a determined learner can acquire signs in most instances sufficient to communicate with the deaf child in the family. Then dramatic things begin to happen. The child is no longer alienated from other family members. Behavior becomes more reasonable. Hyperactivity and tension are reduced. But most of all the child's own language development begins to be apparent. The first essential requirement is met when there is a language model fully accessible to him in the home. Signs provide a visual symbol system which he can learn to use in a functional way, that is, to really communicate, not to perform an academic exercise to accommodate a teacher. He is dealing with the stuff of life in contrast to a contrived and artificial classroom situation.

There is a less typical but growing number of deaf children of hearing parents who provide a more optimistic developmental picture. These are the deaf children whose parents were fortunate enough to receive realistic advice in the early preschool years from audiologists, psychologists, school counselors, who understand the significance of learning to sign as well as talk. That is, they have added signs to spoken and amplified language in their every-day conversations with their deaf child. These are the "new breed" of young profoundly deaf children whose social behavior is less frustrated, who can sign in sentences at ages three, four, and five, ask questions, and generally carry on a conversation. They are literally "little people". For example, at a recent overly long PTA meeting, I observed a four-year-old deaf child complain to his mother about being hungry. She signed and spoke that they would all get something to eat as soon as the meeting was over. The little four-year-old looked at her dolefully and signed and mouthed in return, "I can't wait." That is communication or functional language, the natural outgrowth of a continuous and rich dialogue between parent and child.

For the last three years the Maryland School for the Deaf has based its educational program on the concept of total communication. Total communication is the right of every deaf child to learn to use all forms of communication so that he may have the full opportunity to develop language competence at the earliest possible age. This implies introduction to a reliable receptive-expressive symbol system in the preschool years between the ages of one and five. Total communication includes the full spectrum of language modes: child-devised gestures, formal sign language, speech, speechreading, fingerspelling, reading and writing. Every deaf child has the opportunity to develop any remnant of residual hearing for the enhancement of speech and speechreading skills through the use of individual hearing aids and/or high fidelity group amplification systems.

Learning to communicate starts in the home between the parents and the child. For the deaf parents this is a very natural procedure, but for hearing parents of a deaf child, learning to communicate may be delayed until they learn to use a visual symbol system adequately. Communication evolves from primitive gestures to sophisticated forms of linguistic interaction. Parents are encouraged to interact with their deaf child in the normal everyday experiences using any and all modes of communication which permit true communication to occur. Initially the deaf child will "point and show" indicating the most elemental attempt to express himself. It is important to remember that the idea originates in the child's mind and that he makes the attempt to communicate rather than the adult superimposing his ideas on the child with all the risks of confusion of meanings. Soon the deaf child is inventing obvious gestures for sleeping, eating, drinking and when encouraged will develop an elaborate gesture system understood within the family. It is at this point that the child recognizes that he can use a symbol system to make things happen. These are the beginnings of communication in the true sense of the word. Speech and speechreading can be associated with signs when the parent speaks as he signs. The child is soon attempting to imitate the sign on the lips with the signs on the hands. After he has internalized the meaning or concepts of the signs with the global speech formation, he finds it possible to respond to speechreading. When communication has been firmly established in the home through the use of a reliable visual symbol system during the early preschool years, learning to read and write in the classroom becomes a much less formidable task for the young deaf child.

Fingerspelling reinforces reading and writing and requires a level of maturation and language experience much greater than that required to learn to sign. Signs provide the "coin of exchange" for the transmission of ideas and the development of concepts. Fingerspelling contributes to literacy or the ability to read and write. Together signs and fingerspelling make it possible to communicate in the syntactical order of the English language.

Total communication recognizes the hierarchy of visual symbol systems from the simplest gestures used by the very young deaf child in his first efforts to abstract his own meanings to the most complex syntactical sign system. As the deaf child learns to communicate more complex ideas his need for sophisticated signing grows. However, total communication recognizes that the American Sign Language or Ameslan holds a special place in the lives of all deaf people and that it is the root of all sign languages possessing dramatic, and emotional characteristics which have an appeal to all people, both hearing and deaf.

Amplification or the use of individual hearing aids and group equipment in the classroom play an important role in total communication. When auditory cues are consistently associated with signs they provide reinforcement for speech and speechreading skills. For the profoundly deaf child it is unrealistic to expect language to develop spontaneously without adequate visual reinforcement provided by signs and fingerspelling. Oral-aural success is primarily dependent upon auditory feedback or the extent to which the child can monitor his own speech as well as the speech of others.

In the final analysis, total communication is a philosophical point of view rather than a method to educate deaf children. Through communication the barriers of isolation between parents and child, "the hearing" and "the deaf" are reduced. A climate of understanding and acceptance of the realities of deafness emerge. As the child and the family learn to understand each other, frustrations and anxieties diminish and feelings of acceptance and well-being grow so that the child is free to interact and to learn to become a happy, literate, and communicating member of society.

Discussion

Discussion centered around making parents more aware of ways in which they can be involved in helping the child.

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EDUCATIONAL PROJECT FOR DEAF-BLIND CHILDREN AT THE WESTERN PENNSYLVANIA SCHOOL FOR BLIND CHILDREN, PITTSBURGH

Janet Klineman, Ph.D., educational director, Lower School

Western Pennsylvania School for Blind Children has grown with the pains of change. With the increased numbers of multiply handicapped children applying for admission, we have learned to look for children's abilities and not be dismayed by their disabilities. Previously an academically oriented residential school for blind children, we started in July, 1969 with Title I, P.L. 89–313 funds to shift gears to develop individualized programs for multiply handicapped children. These visually impaired children with complex learning and behavior problems due to emotional disorders, retardation, cerebral palsy and the like responded to the application of child development theories, positive reinforcement techniques and task analysis approaches. But they had useful hearing.

During the school year 1971–72 we were asked to admit three children with severe auditory and visual impairments who were functioning at levels of development way below their chronological ages. Their acceptance led to the implementation of a Title VI–C Project for Deaf-Blind Children funded under the auspices of the Mid-Atlantic-North and Carribbean Regional Center for Deaf Blind Children this year, 1972–73. Our population of deaf-blind children ranged from a teen-age boy in the high school with a recent loss of hearing to a little girl eight months old diagnosed as a rubella child.

My message today—the reason for talking to instructors of the deaf about our progress—is that we needed your skills to develop the children's programs. Communication skills were vital. We utilized consultative services from Pittsburgh Hearing and Speech Society and from audiologists at Children's Hospital of Pittsburgh and Eye and Ear Hospital of Pittsburgh. We hired a teacher of the deaf and a speech therapist. Staff members learned manual communication. We became involved in total communication techniques.

Our teacher of the deaf acquired visual and tactile stimulation techniques. She learned not to be overwhelmed by a child's visual handicap. If a child couldn't learn by visual imitation, he needed other kinds of sensory input. Most of all he needed love—an acceptance of his individual qualities as a human being.

We developed each child's program from his performance level or base line on assessment scales in the areas of communication, mobility, self-care skills and socialization. And as Dr. Furth stated this morning, we had to help each child develop emotionally and socially and to acquire a thinking process of his own before he could meaningfully utilize a symbolic system of language. It even meant helping a nine-year-old child work through 18- to 36-month stages of child development to gain self-identity and the stage of autonomy. The children's progress had to be evaluated over extended periods of time. We recorded approximations, any positive relationships with the adult, and steps toward performing educational tasks with less and less help from the adult.

The most meaningful way I can further present our project is to discuss individual children's programs and show some videotapes which illustrate their progress.

J., the 9-year-old mentioned previously was multiply handicapped due to maternal rubella during the fifth week of pregnancy. He has useful residual vision with and without corrective lenses. He responds to sound unaided at 90 dB. His benefits from amplification are limited. He has no speech. He has a congenital heart condition.

He has three older normal brothers. His family is warm and loving but were overhelmed by J.'s problems. At age 4 he was not walking independently, not eating solid foods, not toilet trained, and he was a biter and scratcher. He was content when he could fixate on light. It has been impossible to test him psychologically.

He first responded to structured instruction and stimulation in a summer day program in 1969. When he was admitted to the Western Pennsylvania School for Blind Children program in January, 1972, he had been conditioned to respond to flashlight rewards. He performed simple motor skills independently; he matched colors and pictures; he used signs for boy, mother, book, and milk spontaneously if the object or picture was presented. He perceived and complied to signs for sit down, no, wrong, and stand up. He had some self-help skills but was still not toilet trained and did not eat solid foods unless forced.

A program was built around his needs and performance levels. A doctoral candidate working as a child care worker, Sandra Fox, followed her instincts and knowledge of child development. She carried him when he requested it; she played his own form of "peek-a-boo" as he crawled inside the classroom cupboards and waved to her when he closed the door. She felt such activities enabled him to gain strength and move toward autonomy and human-ness. At the same time he learned the signs for open and closed in a meaningful way. He gained a calmness sitting in her lap. He learned to respond to "good boy" signs and pats on the head instead of flashlight rewards.

As a residential student during 1972–73 he made gains in every area of his program. Dr. Verna Hart, professor and special educator of deaf-blind children and consultant to the program, observed him during the year. Her observations confirmed the step-by-step evaluations of J.'s teachers and child care workers. She felt that he had gained most in the areas of social and emotional development and in the use of communicative skills. He was establishing real eye contact in his relationships with other people. He learned to stomp and to use the "mad" sign appropriately instead of biting or scratching. He gained a receptive language of over 150 words and an expressive one of about 50 words. The most advanced videotape showed J. matching words to pictures and how he corrected a mistake he made. He should be ready for an academically oriented program next year.

T., a seven and a half year-old-girl, had been diagnosed as deaf-blind and retarded. Her case study indicated some potential if she received an education as a deaf-blind child. When she was admitted to the program in January, 1972, she was an extremely active and highly inquisitive child. She independently performed all of her self-care skills. She appeared retarded in only one area—language development. She had useful residual vision and used it efficiently. In a controlled situation, with amplification she produced verbalizations in an imitative process.

She responded to a variety of educational experiences utilizing a task-analysis format as well as daily-living experiences, creative play, and art instruction. In March of 1973 after she acquired a receptive and expressive manual communication language system, her teacher went with her for an ophthalmological examination. T. has peripheral vision and an esotropia, so it is not obvious that she is focusing and using her vision. With the teacher as an interpreter, the doctor was able to refract her and discover that she has 20/20 near vision and 20/80 distance vision.

Lip reading was then encouraged and a more highly structured academic program was planned. The most advanced videotape of T. taken in June, 1973, showed her lip reading and following the teacher's instructions to select objects of certain colors. She clearly produced the words blue, purple, more, and off. Since deafness is her primary problem, she will be enrolled at the Western Pennsylvania School for the Deaf in September, 1973.

To try to prevent misdiagnoses and to give deaf-blind children opportunities for development at appropriate maturational levels, doctors in the Pittsburgh area are now referring such children as soon as they find the deviations from normal.

The last videotape scene showed a 17-month-old rubella girl who was first seen at school when she was eight months old. Her mother brought her to school one morning a week during the year. On the videotape she is learning to crawl, to drink from a cup, and to finger play with Jello as the mother observes her with the child care worker.

Construction of a new floor to the Lower School of Western Pennsylvania School for Blind Children is planned for next year to provide additional space for the further development of an Evaluation and Developmental Center for multiply handicapped and deaf-blind children from infancy to 8 years of age.

A RHYTHM PROGRAM FOR DEAF CHILDREN

Mary Lou Koelkebeck, director of the rhythm program, Central Institute for the Deaf, St. Louis, Mo.

Muscially, rhythm can be described as a movement of music in time. It encompasses such dimensions as beat, tempo, meter and the pattern arrangement of notes in a musical composition. The Rhythm Program as it is carried out at Central Institute for the Deaf certainly utilizes music but involves speech, language learning, body movement, development of patterns of movement, gaining knowledge of our musical heritage, and just having fun. Bruner (p. 122) in writing of what is worth learning lists the following: "Knowledge of the human condition, knowledge of the nature and dynamics of society, knowledge of the past, and knowledge of the products of our artistic heritage that mark the history of our esthetic wonder and delight." Some knowledge of music is certainly valuable to the hearing impaired child.

The Rhythm Program at Central Institute has been an important part of our curriculum since the founding of the school in 1914. Dr. Max A. Goldstein (1939) the founder of the school, was a firm believer in auditory training by many means. His book, *The Acoustic Method for the Training of the Deaf and Hard of Hearing Child*, although published in 1939, contains valuable information. I have examined some of the museum items which are housed in the Goldstein Library and found some interesting ideas used in the early days to bring music to the hearing impaired child. One such instrument was a pump organ to which were attached rubber tubes that the children held to their ears. Our equipment is somewhat more sophisticated today, but our intention is still to make music a part of the deaf child's environment.

As the Director of the Rhythm Classes at Central Institute, it was important to outline some general objectives which we wished to achieve and which would dictate the specific activities we would follow. The list I compiled is as follows:

1. To further the teaching of speech and language.
2. To assist the children;
    (a) To develop creativity through a rhythmic response.

(b) To respond to rhythm through body movements and speech.

(c) To learn songs and dances generally known by normally hearing children.

(d) To develop some appreciation of music composers and performers through listening.

(e) To participate with a group.

(f) To follow directions.

(g) To develop self confidence.

(h) To have fun.

Having stated these lofty goals, I began to plan a program which could be used with all children at Central Institute. Since our children are from 3 to 16 years of age, we needed to provide for a wide range of participation for our classes, and we needed to be flexible enough to fit the program to children with a variety of needs and abilities.

The Rhythm Classes are conducted in a large auditorium with a wooden floor. Two years ago an auditory training unit was designed and built by our Research Department and installed around the grand piano. Attenuators were fastened to the wooden structure under the piano. Each child brings to class his two earmolds and can use the group hearing aid cord with the volume adjusted to his particular choice. The teacher's microphone is worn around her neck and amplifies her speech and the piano music. A separate speaker which amplifies records is also available. Directly behind the teacher is a screen on which transparencies of the words of songs or instructions can be shown. The overhead projector is just to the right of the teacher and can be easily manipulated by her or by an assistant. The assistant can sit at the piano or stand at the screen and direct attention to the words on the screen while the music is being played. In this way the children can follow the written words or speechread and follow the teacher. Of course, the written words are discarded when the songs are well known.

A record player and separate speaker which amplifies records is also part of the system. The children love to listen to the piano and records through the group hearing aid, and often ask to hear a particular piece over and over. They enjoy sitting on the floor around the portable speaker and keep time by clapping or body movements and speaking with the record. Often they put their hands on the top of the wooden speaker to feel the vibration. One song the children particularly enjoy is about a train and the recorded music starts off with a train whistle. At the end the music fades away as if the train is moving off into the distance. The children find this a fascinating concept and each little hand is put on the speaker so that they can know at what point the music is entirely gone.

The classes are 30 minutes long for the Primary children and are extended to 45 minutes for the older groups. Each class is scheduled for Rhythm at least once a week. The teacher accompanies the children and is encouraged to continue the learning of the songs, poems or games which are started during the special class. Each child keeps a Rhythm notebook into which are placed words to songs, special vocabulary, speech instruction, and information about music, composers, and instruments.

In planning a program for the Rhythm classes, I examined the basic concepts in music to see how each would fit into our program. The eight concepts I considered were as follows:

1. Pitch
2. Rhythm
3. Simultaneity
4. Timbre
5. Volume or intensity
6. Texture
7. Monophony
8. Form

Pitch refers to the range of musical sounds, the intervals between sounds, and the various kinds of musical scales—major, minor, pentatonic and chromatic. Rhythm is the movement of music in time. It may mean the beat or pulse, or the pattern arrangement of notes. It also relates to the tempo and how we perceive a musical selection—fast or slow. Simultaneity means simply, things happening at one time. It refers to the harmony or non-harmony of a piece of music. Timbre is the tone color, or what makes a particular sound and how this is done. For example, a piano sounds different from a tuba because of the construction of the instrument and how it is played. Volume, of course, refers to the loudness. Texture is the form of music which makes things sound different. Monophony is a single melody or note while polyphony is two or more melodies sung or played at one time. Form denotes the kind of composition. Symphony, sonata, concerto and quartet are a few well known forms.

The Course of Study which I prepared was designed to include activities which would lead to achieving the general objectives listed earlier and would include the concepts of music which seemed applicable to our work. Four levels of work were prepared. The levels progress in difficulty and are based on the cyclic approach to learning. I have started with a small concept and enlarged upon it. No item is dropped from the curriculum as we proceed from the easy to the more difficult, but we gradually go into more depth in concepts and skills.

Copies of the Rhythm Outline are available and will contain objectives and suggested songs and books for each level. A record list is also included with ideas for listening appropriate to the level or work. In listing suggested songs, I have only made a beginning in this area. The lists are in no way exhaustive or complete. No seasonal songs have been mentioned, but are readily available in many sources. Other songs might include those about holidays, other cultures which are being studied, community helpers, popular songs heard on radio or television, songs from movies, and camp and scout songs. We also use a great deal of original material which is based on the interest and ability of the children. A few samples of these songs are as follows:

Tip toe,
Nice and slow.
Tip toe.
Around we go.

I have two eyes.
I have a nose.
I have a mouth.
I have ten toes.

These are favorites of the children and are done with appropriate actions—and are accompanied by lots of smiles.

In Level 1, the movement objectives are to develop creative and imitative basic movements such as walking, hopping, running, skipping and an imitation of animal movements, in addition to clapping, swaying, bending and large arm movements. These activities are suggested by music, by pictures of animals and actions, by the weather, by the season, and very often by the children themselves. One activity which the children love is to use large chiffon scarves to move about or to imitate an action. Sometimes the scarves are carried like flags when we march. Sometimes they are put over the children's faces and we have a roomful of scary witches. Sometimes the scarves are moved slowly like a fleecy cloud, and sometimes they are twirled about like a dark thunder cloud.

The scarves can be held together by a line of children and they become a train moving slowly out of the station. The imagination of the children is an exciting thing to watch and the use of the scarves has fostered their creativity. Long streamers of colored crepe paper and balloons can also be used in the same way. It is important to remember that little children need to explore the space which surrounds them so that they can learn the dimensions of their bodies in movement. To encourage this, we often have free movement throughout the large room, but let the children know that they must not touch another person. They can run, walk, dance, pretend to fly or do whatever the piano or record suggests without disturbing others. This doesn't always work out this way, but I believe that children need to explore all kinds of movement.

Also on Level 1, the concept of high and low pitch, as well as loud and soft, are introduced on the piano, rhythm instruments and voice. The speech aspects depend on the ability of the individual child. The children enjoy making up rhythmic patterns using their names and other familiar words. For example, in one class we have Michael and Beth, and we can say and clap to the rhythmic patterns of their names, and we can even make up little songs about them.

Michael—Beth Michael—Beth
Run fast. Slow down.

In addition to the suggested songs in the outline, there are many ideas which can be incorporated into the Rhythm program which the teacher can suggest from her classroom activities. One favorite activity is to have the children bring to class pictures of animals or to describe an animal that they would like to be. The song that we sing is:

A fish can swim.
A fish can swim.
A fish can swim.
We can swim too.

When the words have been recited, the children imitate the animal that has been chosen. On a snowy day, we may pretend to make snowballs and have a little snowball fight to music. Often the children themselves suggest the speech, but we might say:

One
Two
I hit you!

As I have mentioned earlier, the suggested songs are intended to give a few ideas about what material might be appropriate, and the suggested records fall into the same category. The series of records, "Songs for Children With Special Needs," put out by Bowmar Records, Inc. (622 Rodier Drive, Glendale, California) have been very useful. Our children enjoy "singing along" or just listening.

On Level 2, the rhythm objectives are to extend the body movements to include the following: gallop, leap, jump, walk fast or slow, as well as pushing, pulling and stretching movements. We also use balls to pitch, throw and bounce. These actions can be combined to include more complicated patterns such as walk—walk—hop—hop—hop. We are building up a memory for a sequence of actions or ideas. Clapping patterns can be more difficult and can be combined with other actions such as snapping fingers, tapping toes, stamping, nodding or touching parts of the body. Rhythm instruments are used to keep time to regular two and three beat music. Sometimes the children indicate what I am to play by beating out a pattern on a drum or other instrument. At this level, we begin to learn simple dances such as "London Bridge," "Ring Around the Rosie," "Farmer in the Dell," "Here We Go Round the Mulberry Bush" and many others.

Here we begin to work on a finer distinction of high and low and ask such questions as: "Which note is higher?", "How many high notes do you hear?" and "Is the music high or low?" Degrees of loudness are introduced. Through listening to records or piano music, the children can be encouraged to think of the movement of an animal. For example, a slow, low-pitched heavy piece might make them think of an elephant, whereas a light, high-pitched slow moving piece might make them think of a feather blowing in the breeze. The possibilities here are endless and are a valuable tool to encourage creative thinking and play acting.

The speech activities at this level will again depend on the individual abilities, but should certainly include easy nursery rhymes, simple songs about seasons, holidays, community helpers, and home and school activities. Original material is still valuable, but there are many songs that are well-known by most children that we need to teach to the hearing impaired child. The children still find a great deal of pleasure in making up songs and rhythmic patterns out of their names, common foods, makes of cars, clothes—in fact any category can be used. This not only serves a useful rhythmic purpose, but is valuable as a tool to learn categorization as well as new language and vocabulary.

For example:

Katherine Ann
David
Lisa
Bill

becomes a very interesting pattern to the children involved and they enjoy clapping or moving to this rhythm while chanting the speech.

Fruits can be used for the same purpose:

Pear
Banana
Orange
Apple

I'm sure you can see the possibilities are endless and I hope you are thinking of other examples which might be useful to classes of children you know. I hope also, that you can see how these games and activities can improve speech and language. If the children can gain a conscious control of rhythmic speech patterns, the spontaneous use of these patterns in speaking will result.

On Level 3, movements are combined and the children are encouraged to suggest their own ideas. Rhythm instruments are used to accompany speech exercise, the piano and records. Action songs which combine speech and actions or movement are learned. Examples of these are "The Itsy Bitsy Spider", "Down by the Station", and "My Hat". Simple folk dances which follow a pattern are learned and easy folk dance steps are introduced. Echo clapping is appropriate here although we have been doing lots of clapping and keeping time to music and speech patterns in the other levels. Echo clapping is just as the name indicates. The teacher claps a pattern and the children respond like an echo. Hearing impaired children sometimes have problems with this activity because much of the information for the echo pattern is stored as an auditory memory factor.

Tapping the pattern on the shoulder or back of the child will help him to reproduce it. The leader's pattern may be beat on a drum or with wooden sticks to give a louder sound. The children enjoy sitting on the floor and keeping time or following patterns with the sticks. Dowel rods cut to about 10 inches in length are easily handled by the children and are excellent instruments.

A variety of musical instruments are demonstrated and the children learn how they are played and how they sound, and if possible, experiment with playing these instruments. The more common instruments used here are the piano, violin, flute, clarinet, trombone, tuba, drum and cymbal. Records illustrating these sounds are heard and pitch and loudness are discussed in connection with the sounds.

Listening to records which might suggest a musical story is a delightful activity. Sometimes the story is told with the record, as in "Peter and the Wolf", or suggested by the record, as in the "Dance of the Mosquito". The children are encouraged to make up original stories after a musical experience.

Songs that are appropriate for this level are endless. Camp songs, rounds, folk tunes, singing games and seasonal songs as well as popular songs are good choices. Just a few of these are as follows:

My Bonnie
Old MacDonald
Rabbit in the Wood
Are You Sleeping?
Shoo Fly
Tell Me Why
White Coral Bells
If You're Happy and You Know It

Level 4 describes our most advanced procedures. In response to rhythmic patterns the children respond by clapping, movement, or use of rhythm instruments to 2/4, 3/4, 4/4 and 6/8 meters. We attempt to analyze the rhythmic character of songs or records, and make up rhythmic accompaniment by using drums or other instruments. The speech rhythm of the songs is worked on during the Speech Class and is done to the accompaniment of the piano or record during the Rhythm Class. I am fortunate to have the Speech Teacher for the older students as my assistant and she coordinates the rhythm and speech work in the Speech periods during the regular class day.

The determination of the pitch and loudness are continued at the piano and on records and there is a transfer to accent and stress patterns of speech. Popular songs as well as old time favorites of increasing difficulties are learned. A few of the songs worked on during this past year are:

Dixie
This Land Is My Land
She'll Be Coming Round the Mountain
When the Saints Come Marching Home
Grandfather's Clock
Darling Clementine
Michael, Row the Boat Ashore
The Old Gray Mare
I'd Like to Teach the World to Sing
If I Had a Hammer

During the past year, our older boys and girls have learned a number of square dance steps and have become interested in practicing and learning more steps. The highlight of this activity came when we were invited to perform several dances for a large square dance group of hearing adults. We will certainly be continuing this activity next year.

I hope that I have been able to give some of you some food for thought about the activities that surround the introduction of music to a hearing impaired child. The question that some of you may be asking is, Is it really important for deaf children to be exposed to music? If your answer is no, then the rhythm program will take on little significance. My answer is yes, and I am excited about the results I have seen from our program. Van Uden (1963) wrote:

> The most important aim we pursue with our rhythmic exercises in sound-perception is: to make our children accept sound, not as an enemy, but as a friend; to make them express themselves, which both educates them more and more to become evermore beautiful, harmoniously developed human beings.

It is my hope that all children can have the opportunity to benefit from the exposure to music, rhythmic movement and sound.

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INDIVIDUAL INSTRUCTION AND THE MATH LEARNING CENTER CONCEPT

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Educators are constantly seeking to improve both the *means* and the *ends* of education. At times the two appear to be closely related (as when thinking about methods and content) and, conversely, at other times means and ends are quite clearly separated. It is often difficult to decide whether the educator ought to concentrate on improving the ends, or whether the ends adequately represent societal expectations and the educator ought to focus on improving education by improving the means.

Efforts to improve the means of instruction have not borne great fruit and today many teachers are employing means hardly distinguishable from those employed in the 1800's. Additionally, efforts to demonstrate or prove that pictures are better than verbal symbols, rereading is better than reading once, underlining will improve remembering, note-taking is a valid method to improve recall, outlining enhances retention, drill materials X are better than Y, and other similar studies of teaching and learning strategies have generally resulted in failure. There is no one method of teaching and no one method of learning which has been identified as having clear superiority over any other method for all students. One is generally led to the conclusion that searching for such a panacea is a waste of time and effort.

It can be observed, however, that the things that "work", that is, the methods and strategies which have some proven value in enabling learners to learn, do have elements in common. These include individual pacing, feedback and reinforcement. We find such elements in tutoring, programmed instruction and computer assisted instruction. Additionally, there is an abundance of hard evidence to show that people vary in their learning ability, mode of learning, study habits, interests, amount learned about a given topic, skill development, motor ability, productivity on jobs, language development, etc., the uniqueness of humans is an inescapable fact.

Now, if we add all of this together, what do we get? We seem to discover and rediscover that learning is an individual process. This leads directly to individualized instruction as perhaps the one and only *means* to whatever *ends* society decides are worthy, achievable goals (objectives) of education.

In the study of mathematics, most students are accustomed to the traditional lecture-textbook method where they read a certain section in the text, go to class for a lecture on the material where, if they are lucky, they may have a few of their questions answered by the teacher. Then they are left on their own to try the exercises. The frustrations of this type of situation are many. First, most students have difficulty reading a math textbook; second, once the classroom lecture is over, the blackboard is erased and the explanatory material is lost forever; third, very few students have the same questions and the teacher, when answering, is more often than not talking to just one student; and fourth, many students have great difficulty working their homework assignments 5 or 6 hours after the lecture.

The questions that the above listed problems present were considered by the NTID's Department of Mathematics. The best all-over solution that we could come up with was to have a completely individualized program where the students could learn at their own pace, have access to the teachers as they need them, and come in for instruction when they wish.

The Math Learning Center is located in a large room. Classes are not scheduled, but the students are expected to come in at least 3 or 5 times weekly, according to which course he is studying, for a progress check. The materials for the students are called Modules and are intended to serve as study guides. No time limit is set for the student to complete a course. Some students finish the course objectives in as little as 2 weeks and others take considerably longer. Our records show that there is no correlation between the time spent on a course and the final achievement score. Those students who stay in a course longer than average frequently score as high or higher than those students who complete the course in a relatively short period of time.

Our work with Modules began 4 years ago. They have been revised annually in an attempt to make the course more accessible to our students. We are presently working on a series of loop films, film strip, and other media which are intended to complement the modules and make mathematics as visible as possible.

The function of the teacher in the Math Learning Center is to assist students who may encounter learning obstacles and to develop and revise curriculum and learning materials as the need arises.

At present, a total of 18 different math courses are offered through the Math Learning Center. These courses range from remedial arithmetic through and including the calculus. There is no minimum number of students required before a course may be offered. If only one student is ready for a particular course, he is allowed to start at any time he wishes.

Attendance at the Math Learning Center is required as in a regular school program. However, students are allowed to attend the MLC as often as they wish beyond their required time. Some students are so enthusiastic about math that they attend as much as 15 hours weekly.

EDUCATIONAL FILMS FOR THE HEARING IMPAIRED

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The Midwest Regional Media Center for the Deaf (MRMCD) has been, for several years, engaged in the design and production of educational films for hearing impaired learners. During this time, we have experimented with various techniques in the production of films that would serve to improve the utilization of film as a learning tool for hearing impaired children. Along with our special concern for the deaf, we have had a continuing interest in the innovative uses of motion pictures, the application of instructional design procedures in the production of films and the changes in instructional techniques caused by the use of media.

Throughout the course of our work, there have been at least three major themes to which we have, more or less, consistently adhered. First, we have sought ways to use 8mm cartridged films. Secondly, we have tried to design materials for independent study so that our films could be placed directly in the hands of children. Finally, we have worked to design films that would more effectively communicate with our audience.

Since the hearing impaired audience is one that relies heavily on visual communications, the filmmaker finds himself presented with an immense challenge. As filmmakers we are concerned, first and foremost, with the communication of visual ideas. It is very natural to assume that film is an ideal way to communicate with the deaf. But first, the medium must be adapted to achieve its maximum potential with this special audience. Once we realize that we have a varied audience, with a wide range of needs, we can begin to adapt the medium to meet those needs. In the search to find new solutions and ways to adapt our materials we may find that old rules are broken and that what we do for our audience won't look like what has been done for a general audience.

The productions undertaken at the Midwest Regional Media Center for the Deaf were developed to solve a communication problem or try out new uses of instructional media with our learning population. Our earliest assessment of the learners in our audience disclosed problems and difficulties related to the acquisition of language. Hearing impairment is an educational handicap and language related problems became a high priority for film production topics. It was our hope that film and other media techniques could be brought to bear on these difficulties in such a way that the proven advantages of educational media would serve to accelerate learning.

Dr. Robert E. Stepp, Director of the MRMCD, completed a feasibility study in 1965 entitled "The Learning Laboratory for the Hard of Hearing", wherein he concluded that hearing impaired children were able to conduct their own learning experiences using 8mm cartridge films. He felt that deaf children had to rely, far too often, on the physical presence of the teacher in order to learn. When the teacher was not present, and not speaking directly to the child, the child could not turn elsewhere for language input. To provide an independent study situation for these children, Dr. Stepp had produced a series of 8mm cartridged films to be used for lipreading practice in an independent study situation. The films were given to the children and viewed on an 8mm rear screen projector. This situation proved a success in terms of learning and the ability of the children to handle films on their own. The study became the basis for the establishment of the MRMCD and our continuing interest in 8mm film.

In subsequent years, the MRMCD has continued to find ways to use film in independent study situations. After the Learning Laboratory study, the MRMCD, beginning in 1966 and continuing until 1969, produced a series of films devoted to the idea of promoting independent study with 8mm films and other related media. In 1967, we completed a series of nearly one-hundred 8mm cartridged films designed to teach a basic lipreading vocabulary of nouns to young hearing impaired learners. These films were designed and written by Dr. Frank B. Withrow, who is currently Executive Secretary of the National Advisory Committee of Handicapped Children and the National Advisory Committee of the Deaf.

The Noun Vocabulary films were designed, in a very unique way, to be self-instructional. Each film included a series of sequences composed of three shots. The first shot was of a blue background card that turned the screen entirely blue. During the next shot, a medium closeup of a teacher of the deaf, the word was spoken in either a full face position or in a three-quarters profile. After the teacher had said the word, the screen would turn red, at which time the students were instructed to turn the projector off. While the projector was off, the students had time to make a response that would indicate that they understood the word. The response could be made in several ways, by writing the word, picking out a picture and matching it with a word or just circling the correct word in a work book. (These are only a few examples, in actual practice several modes of response were used.) After making his response, the student turned the projector on and had his response confirmed. The response confirmation depending on the number of times the word had been seen in the sequence, faded away instructional cues as the student learned to identify the word. For instance, during the first exposure, the word was repeated twice and a picture was shown to help identify the noun. (A picture of a car would appear with the word "car", and so on.) Also, below the picture the word was written in manuscript and cursive form. One of these cues was withdrawn each time the word was seen so that by the time the word was presented for the last time, only the picture remained and the word was said off-screen. The word was repeated at least five times during the course of the films. Each film contained fifteen to eighteen exposures of different nouns. Throughout the total program, more than 300 nouns were presented to the learner.

All of the Noun Vocabulary films are self-instructional and include a series of six test films along with a guide and scripts for the teacher. One-hundred sets of films were released to hearing impaired programs across the United States along with 8mm projectors.

Next we wanted to use these films to teach language, namely parts of speech. Almost all of the films that have been captioned for the deaf are intended for general education. General education films, meant for a hearing audience, tend to rely very heavily on the sound track to inform and teach the viewer. We needed to have a sound track, some of our audience could use a part of the sound, but we could not count on it to convey a verbal message to our learners. Moreover, the pace of many educational films is based on the amount of verbal information contained in the sound track or the track is cut to conform to the pace of a well-edited picture.

In addition to these traditional considerations of the filmmaker, we had to add another element. Hearing impaired learners simply do not read very well or very fast. When captions are placed on a film already in existence, some adaptation must be made to the pace of the film. This usually means that the captions must be a condensed version of the verbal track. In order to adapt, or produce, a film that meets the needs of a deaf audience, one must take into account the additional time needed for hearing impaired students to read the captions. This must be balanced with good editing.

Essentially, we tried two different ideas with captions. On one film, we increased the reading time of the captions by introducing a freeze frame at the end of each verbal sequence spoken by a character in the film. Each scene was photographed so that the student could see the actor in the film well enough to lipread him. This necessitated filming each actor straight on, in either a close-up or a medium shot, a severe stricture on the cameraman and director. At the end of each scene a frame was chosen and the scene was printed to include the caption on the screen for about two and one-half times as long as an ordinary caption or print information, such as a title, is usually shown.

During our field test of the films, we found that the captions still do not remain on the screen long enough for some of our students. Our remedy for this, since we are using 8mm loop films, is to ask the student to see the film again. (This presented us with another problem, about which we will speak in greater detail later.) Another possible solution was tried by using title cards, somewhat in the same way as the old silent films, but including a way for the student to respond to the dialogue. Instead of asking the student to turn off the projector, this time we asked the student to point to a word that would complete a sentence. From the three or four words presented on the screen, the correct word answer would disappear from the list and appear in a blank left open in the sentence to be completed. Thus, the student is given a chance to make a response and has his response confirmed. There were other variations on this theme but the idea was really the same: make a response according to a question asked on the title frame and have it confirmed a few seconds later.

The subject matter for the experimental films was parts of speech. Four of the films were intended to teach a list of selected verbs and one film was designed to teach prepositions. The language in the verb films was planned around a simple event in such a way that we could use future, present and past tenses of verbs. In the preposition film a series of different sequences were used to illustrate the proper usage of the words and to take advantage of the motion picture's ability to show movement.

In every case except one, the film in which we used the freeze frame technique, the students were involved in the learning sequence by having to make some kind of response. We feel that film can give an individual an opportunity to practice the subject he is learning and time for this can be included in the design of a film when the subject matter is appropriate.

Needless to say, the project's interest in learner involvement, self-instruction and the sequence of instruction eventually led to a commitment to programmed instruction. Second only to the Noun Vocabulary films in scope, the largest project undertaken by the MRMCD was a two-part series devoted to the subject of space exploration. Early in 1967 the MRMCD approached NASA and asked for cooperation and permission to use their film library. Permission was freely given and the MRMCD embarked on a project to develop a multi-media kit for the hearing impaired. The hope was, to design a series of films that could be used along with a programmed booklet to explain the objectives and accomplishments of the aerospace program.

The Aerospace project turned out differently than we had intended. In previous projects we usually decided, in advance of other considerations, that a film was needed to solve an educational problem. In this project, we first set our goals, specific vocabulary words and concepts unique to aerospace, and then selected the most appropriate media. We found that the tasks involved were not especially appropriate for film. On the basis of an instructional design procedure, the specifications for the learning tasks were more efficiently handled by print than by film. Since we had expected to design films to meet the needs of our educational objectives, some new thinking about the utilization of 8mm film was required. We had been faced with the problem of a greatly varied reading rate among our population of learners before. Film is a very linear medium especially in the 8mm cartridge format. The solution of re-running the film, that we had used in the past, did not provide the kind of remedial experience a child might need to understand his mistakes. It became clear that we needed to find a better way to handle our verbal information and the information that could be presented on film. Finally we produced two programmed books and two films, relegating the films to a position whereby they supported the print information. In practice, the films were part of the program and were utilized when words failed to explain a concept and it had to be seen. One such concept that comes to mind is that of an orbiting spacecraft. You have to see a spacecraft in orbit to believe it.

The Aerospace program has been field tested, de-bugged, and found to be successful with its specific audience, Junior High hearing impaired students. However, we have had some interesting experiences with the program that are worthy of note.

During our field test with the Aerospace project we found some teachers who would not commit themselves to the concept of self-instruction. (But they were committed to media!) Although we provided programmed books for each student in the class, the teachers took the books apart, made transparencies from the pages, many of which were illustrated, and taught the material in class. This brings to mind another similar instance where we found that many teachers were using the Noun Vocabulary films in group situations. One of the special advantages of self-instruction is in allowing the student to set his own learning pace. Becasue the Noun Vocabulary films are especially adapted to self-instruction it is somewhat discouraging to find, as we did, that 50% of the teachers using these materials were showing them to class groups.

After working for some time with programmed instruction, including a programmed film that teaches the concept of angular and linear motion, the MRMCD began work on materials in the affective domain. As always, we sought to find ways that materials of this kind could be used by children. We thought that objectives in the affective domain would lead us to find better educational techniques in the area of interactive instruction. We felt it was possible to apply the principles of good instructional systems design to this area. In our view, good instructional design includes at least three elements: Clear objectives; student involvement in the learning sequence; and some means of evaluation. The major purpose of using instructional design is to maintain sound principles of communication, imperative when producing materials for the hearing impaired. The earliest project at the MRMCD to deal with objectives in the affective domain was the Film Study Project. The purpose of this project was to produce a multi-media kit that would give hearing impaired high school students an opportunity to develop their analytical and language skills relative to contemporary problems. We designed materials that were used by students in small discussion groups and individually. The unit was planned to enable students to have a first-hand experience with the subject matter and to draw their own conclusions about realistic problems.

The unit included and already produced film that could be made available on loan from the Media Services and Captioned Films

Library: "Profiles in Courage Series, Mary S. McDowell." Also included was a student workbook, a handbook with material relating to the problem and a 30-minute kinescope of a discussion panel, the members of which had been involved in a current controversy. The sequence of viewing, working with print materials and holding a class discussion relative to the problem took about two classroom hours.

Two major conclusions were drawn from the field test results. First, it is possible to produce social studies materials that will communicate to the hearing impaired high school student and allow him to be involved with the study materials in his own way. For the first time, we had produced materials and used films that were not in the 8mm format. Nevertheless, the unit was designed to permit students to guide their own learning experience in a style approaching self-instruction. Second, the opportunities made available to the student in the film study project allowed him to try things out for himself and gave him a chance to exchange and test his ideas with others in his peer group. In a very substantial way, the teacher was excluded from the learning experience. It was the teacher's task to set the stage for the experience and monitor the results. Naturally, we found several teachers resistant to this idea. It was very difficult for them not to function as the final arbiter of attitudes in the classroom. We concluded, from this experience, that the materials raised a number of questions in regard to pedagogy, the use of affective goals, and the probability that teachers would need instruction in the application of these materials before they would be used effectively.

Recently, another set of films has been produced at the MRMCD for use with students at the middle school level. Incorporating ideas and the experience gained in designing the Film Study Project, these films, entitled the "Values Film Series," are also intended to encourage discussion and enquiry. The purpose for each of the three films we produced was to create "open ended" problem situations in which elementary students could imagine themselves and in which they might become involved. (The films do not have an ending that solves the dilemma presented but, instead, the student is required to supply his own resolution to the problem.) The end of the film is the beginning of a student discussion during which each individual can express his opinion of the events as shown and can achieve his own rationale as to how to avoid problems, deal with difficulties resembling those shown in the films, or resolve them in a way that will not lead to further trouble.

We had observed, in classrooms for the deaf, that the normal teaching-learning situation too often precluded peer group interaction. Subject matter was discussed usually by the teacher with each student in turn, frequently excluding the students who were not being talked to at the moment. Students held their attention solidly on the teacher, unwilling to miss anything she might say. We have done no substantive research into the matter, but it seems to us that students are missing an important part of the language input that could be available to them. With these films, as with the Film Study Project, we have tried to produce materials that would encourage students to talk with one another, about academic matters, and would demonstrate to teachers a worthwhile activity that would facilitate discussion.

CONCLUSION

Each film project produced at the MRMCD has been an attempt to solve some educational problem of the hearing impaired. Many of these ideas are not new. Some ideas have been drawn from the logical process of programmed instruction and instructional systems design. The inquiry training methods used in the Film Study Project and the Values Films have been used in general education for some time. What has been of consequence in these developmental projects are the new patterns of instruction required by the use of media. It is simply not possible to use media effectively without changing the environment in which children learn. Sometimes we are disappointed when we find technology misapplied or not used as efficiently as it could be. But the implications are clear. New technology suggests new and innovative ways to teach and learn.

Our major goal, at the MRMCD, has been to stimulate similar or additional ideas about media in schools for the deaf. However, there is no reason why other areas of education for the handicapped cannot adapt these materials for their own use.

There are presently far too few people involved in the design and development of materials for the handicapped. Media in general education and media developed for the hearing impaired can be adapted for use with other populations in special education. A wide variety of sources must be developed to meet the needs of handicapped children.

All of us have a lot of work to do if we intend to make a difference in the education of these children. Join in, if you can, and help us make that difference one that insures a better future for our children.

POST-SECONDARY REGIONAL PROGRAMS FOR DEAF STUDENTS

Robert R. Lauritsen, coordinator, Technical Vocational Program for Deaf Students, St. Paul Technical Vocational Institute, St. Paul, Minn.

New Careers for Deaf People have been greatly expanded through the efforts and support of the Bureau of Education for the Handicapped and the Social and Rehabilitation Services. History records that the first major break-through in post-secondary education for Deaf People occurred in 1864 with the establishment of Gallaudet College. History will also record that the next major break-through in post-secondary education of deaf people had to wait for over one hundred years. Guidance and funding by the Bureau of Education for the Handicapped in a unique and exceptional arrangement with the Social and Rehabilitation Services, made possible the establishment of three regional post-secondary programs for deaf people in 1968 and 1969. The three regional programs are housed at the St. Paul Technical Vocational Institute, (St. Paul TVI), St. Paul, Minnesota; the Seattle Community College, Seattle, Washington; and the Delgado Junior College, New Orleans, Louisiana.

The success of these programs can be measured directly in the areas of skill acquisition in a multiplicity of training areas in technical vocational education at the post-secondary level. To date deaf students have matriculated in 54 unduplicated areas of training (see Appendix I). Employment is a direct result of skill acquisition. St. Paul TVI currently enjoys a success factor of 96.2% based on the first 106 graduates. Of this number 90 students are employed in their major area of training, 7 are employed in unrelated areas and 5 students are continuing their education.

There is a greater success factor than employment and continuing education can report that has resulted from the establishment of the regional programs. These success factors, less tangible, are: (1) an increased public awareness of deafness and a greater acceptance of deaf people into mainstream society, and (2) on an individual and collective basis, improved self-image, self-acceptance and understanding of self by deaf people. These factors are demonstrated daily as deaf students matriculate successfully side-by-side with hearing students as they pursue their education. One illustration of deaf people as people can be viewed in Modern Dance as performed by eight deaf students at St. Paul TVI. Through the medium of Dance these students visually demonstrate their emotional movement from, "agree to disagree", "anger to relief", "frustrate to encourage", "fail to succeed", "copy to create", and "I don't care to, I do care".

The purpose of the three regional Programs for Deaf students as stated in the original Application for Support is as follows:

> To demonstrate the feasibility of using an existing post-secondary facility customarily serving hearing students to serve graduates of secondary programs for deaf students and those deaf students who have for some reason terminated their education prior to the successful completion of a secondary program; and to evaluate this demonstration as it progresses in such a way that the feedback from the evaluation can be used to maximize its impact both as a training plan for deaf people and as a demonstration for the establishment of similar programs elsewhere.

Experience at the three post-secondary programs for deaf students has indicated that there are three basic parameters that are essential for post-secondary programs for deaf students in an integrated setting. These are:

1. A Program for deaf students can be no better than the host facility. Extreme care must be taken in selecting a host facility that has and practices training objectives that are appropriate to the needs of deaf people.

2. Within the host facility a program for deaf students must have quality staff. The present "state of the art" in deaf education yields a shortage of persons qualified to function at the post-secondary level. Few "ready-made" instructors exist for Preparatory Programs; Counselors equipped to function appropriately at the post-secondary level are in short supply. The largest numerical personnel needs in integrated post-secondary programs are Interpreters.

3. The third major parameter for post-secondary programs is continuing funding needs. A recent publication is entitled, "A Guide To College/Career Programs for Deaf Students", edited by Stuckless and Delgado. This Guide is attached as an Appendix. There are twenty-seven Programs for Deaf Students listed in the Guide including Gallaudet College and the National Technical Institute for the Deaf. The overwhelming majority of these programs have tenuous, spurious, and limited funding bases and funding patterns.

It seems prudent to view each of these parameters through the vantage point of St. Paul TVI.

St. Paul TVI maintains a full time day program serving in excess of 2300 students per year in 40 areas of training. The evening continuing education program serves in excess of 15,000 students per year in more than 450 individual courses. St. Paul TVI is housed in a modern five story building with 291,600 square feet of space (over nine acres) on a site of 21 acres. Replacement cost of St. Paul TVI today would exceed $20,000,000. The annual operating budget exceeds $4,500,000 per year. St. Paul TVI is one of 33 area vocational technical institutes within the State of Minnesota. Of the area voca-technical system, the junior college system, the four year college system and the private colleges, St. Paul TVI is the second largest educational facility in Minnesota in terms of enrollment surpassed only by the University of Minnesota. Within this setting the Program for Deaf Students has been accepted as an integral part of the total Institute.

St. Paul TVI and the Program for Deaf Students has attracted a qualified staff for the Program for Deaf Students. In addition to the Director of the Program for Deaf Students, the staff is composed of an Assistant Director who is provided at no cost by St. Paul TVI; three Preparatory Instructors; two counselors; a speech therapist provided part-time by the St. Paul City Schools; a chief Interpreter; an average of fifteen additional Interpreters employed on an hourly basis; and a secretary. Additional personnel are employed throughout the year to meet special needs. One example of this would be an Instructor who conducts the Summer Interpreter Institute which was established to train Interpreters.

Additional specialized staff in Media Services has been made possible under a Contract with Media Services and Captioned Films of the Bureau of Education for the Handicapped. The title of the Contract is, "A Multi-Phase Project To Facilitate Vocational Exploration Via Media". TVI's Media Services is developing and promoting vocational education media that will lead to adequate career selection, career training and job opportunities for handicapped people.

Continuing funding for the Program for Deaf Students presents the major dilemma facing host institutes. The major reason for this dilemma is the regional nature of Programs for Deaf Students. The geographical distribution of students contra-indicates funding for the program by local and state units of government. Regional funding has been investigated and presently found to be non-existent on a continuing basis. This state of affairs suggests that Federal funding is without question the superior choice of funding support if New Careers for Deaf People will continue to exist as a part of our Society.

It seems appropriate to emphasize that funding needs are excess costs required to maintain the Program for Deaf Students. These over and above costs specifically include costs for Personnel, special equipment, consumable supplies, travel, consultant expenses and other expenses. Because of the fixed nature of the budget for the Regional Programs for Deaf Students since 1969 as contrasted to increasing personnel costs virtually all budget monies since 1972 have been fixed costs for Personnel, limited supplies, telephone and travel. The contribution of the host facilities is enormous. The Program for Deaf Students has unrestricted access to all training areas and instructional programs of the host institutes. The funding dilemma will have to be solved by May 31, 1974.

Deaf People have proven time and time again that when given the proper opportunity they will maximize that opportunity. The Bureau of Education for the Handicapped and the Social and Rehabilitation Services has assisted enormously in providing an innovative and realistic approach in creating New Careers for Deaf people by the establishment of the regional Programs for Deaf Students. Three specific success factors have been pointed out. These are: (1) employment and continuing education of graduates at the 96.2% level, (2) an increased public awareness of deafness and a greater acceptance of deaf people into mainstream society, (3) an individual and collective improved self-image, self-acceptance and understanding of self by deaf people. In a very real sense, all Americans are the direct benefactors of the New Careers for Deaf People.

APPENDIX I

Unduplicated Courses of Study at the Three Regional Post-Secondary Programs for Deaf Students

Accounting
Apparel Arts
Architectural Drafting
Architectural Technology
Auto Body Repair
Automotive Mechanics
Baking
Boiler Maintenance
Bookkeeping
Bricklaying
Cabinetmaking
Cake Decorating
Carpentry
Chemical Technology
Child Care and Education
Civil Engineering
Commercial Art
Construction Drafting
Cosmetology
Custom Apparel and Fashion Design
Data Processing
Dental Laboratory Technology
Design Technology
Diesel Mechanics
Drafting
Dry Cleaning
Early Childhood Education
Electro Mechanical Technology
Flower Arranging
Graphic Arts
Health Occupations
Horticulture
Industrial Electronics
Inhalation Therapy
Keypunch
Landscape Technology
Library Technology
Machine Tool Processes
Medical Laboratory Assistant
Office Practice, General
Photography
Plumbing
Practical Nursing
Production Art
Recreational Technology
Restaurant and Hotel Cookery
Secretarial, General
Sheetmetal
Small Appliance Repair
Technical Illustration
Traffic Transportation
Truck Mechanics
Upholstery
Watchmaking
Welding

SOMETHING FOR EVERYONE—CAREER EDUCATION AT THE MARIE H. KATZENBACH SCHOOL FOR THE DEAF

James P. Lenox, principal, Boys' Vocational Department, Marie H. Katzenbach School, West Trenton, N.J.

By way of introduction, the Katzenbach School is an educational institution under the management of the New Jersey State Department of Education. The school is a day and boarding school for deaf residents of the state between the ages of four and twenty-one, and it is considered part of the public school system of New Jersey.

The campus, located in West Trenton, consists of 116 acres containing thirty-two modern buildings. Enrollment is over 600, with deaf children representing 198 school districts. A part-time pre-school program, on a day basis, is offered to children as young as one year of age. The school operates on a five day basis with students returning home on weekends.

Career education is an integral facet of the total Katzenbach School educational program. It has been our objective to expand career options for students and to help them achieve self-determined career objectives. We view career education as a people-oriented concept for all people. It is a life-long process extending from early childhood through adulthood. The American Vocational Association states that career education "is based upon the premise that all honest work and purposeful study is respectable." The statement continues saying, "all types of occupational endeavor are contained within its parameters."

This broad based concept has served as the foundation for the Katzenbach School career education program. The guidelines for the Katzenbach program follow those developed by the AVA task force report on career education.

Career education has responsibility for helping individuals to develop the following attitudes and capabilities:

> Favorable attitudes toward the personal, psychological, social, and economic significance of work.
>
> Appreciation for the worth of all types and levels of work.
>
> Decision-making skills necessary for choosing career options and for changing career directions.
>
> Capability of making considered choices of career goals, based upon development of self in relation to the range of career options.
>
> Capability of charting a course for realization of self-established career goals in keeping with individual desires, needs, and opportunities.
>
> Knowledge, skills and attitudes necessary for entry and success in a career.
>
> Further, career education should place all participants on the next educational or occupational step and assure that all school-leavers are prepared for work.

This report is concerned primarily with career education on a secondary level, but because career education is a life-long process, a brief description of the Katzenbach program in the lower grades is in order. Beginning in the nursery and continuing through the lower grades, career education is handled as a facet of the information and concepts developed in the total curriculum. There is a constant recycling of information and skills within the framework of a spiraling curriculum. Thus, concepts are broadened as the child moves through the program, while at the same time, gradual specialization is provided for in the latter years based on an individual's values, talents, and intellectual development.

Throughout these early years there is tremendous stress on input. There is a constant flow of field trips. These trips are intended to provide the children with the experience of actually seeing adult models within the community performing work tasks. Stress is placed not only on the doing, but also on the reason for doing. An example would be the carpenter. He builds things from wood, he enjoys his work which at times can be difficult. He works for money to support himself and his family, and he is a contributing member of the community with a public life as well as a private life. In short, he is a human—a producer, a consumer, a person with feelings and ideas.

Even though at Katzenbach the community is viewed as a laboratory in which the deaf child can explore, record, and experiment, it is limited. Due to the wide range of career possibilities, options available, and the limitations of time, many of these situations have to be explored through the controlled use of media. Thus bring the experience to the child rather than the child to the experience. One way we at Katzenbach have attempted to do this, is through a State Department of Education's program titled Technology for Children.

This program is centered around a work cart which is mobile and can be moved from classroom to classroom. On the cart are a variety of basic hand tools, cameras, and raw materials. Working with the cart, the teacher can introduce the children to actual hands-on experiences. It is one thing to see the carpenter on the job and understand his relationship to the community, but it is quite another thing to pick up the source of his raw material, wood, and feel that wood, smell it, examine it as a three dimensional object, and alter the basic material with tools into something you create. We feel it is at this point that we have reached a level of understanding, which is truly meaningful to the child.

At approximately 11 years of age a child enters the middle grades. During this phase of his education, he continues to receive career information through the general curriculum, but added to this is the addition of a course titled Family Living. Family Living attempts to develop the knowledge, skills and appreciation necessary to a successful relationship as a member of a family. The program continues through the middle and upper grades. Out of this program the individual's role in relationship to his career and his personal, family and public life is stressed.

During the second year of the middle grades, students enter the pre-vocational program. It is in this program that students receive hands-on, in-shop experience. Students are scheduled for a 45 minute period in a shop which stresses basic skills used in a variety of careers. The program in some ways resembles an industrial arts or home economics course but it differs in that stress is not only placed on basic skills, but on information and skills which are contained in the vocational shops at the school, and on those career options available to individuals through other channels. In the third and final year of the middle grades the pre-vocational program is extended to two periods or 90 minutes per day.

In the upper grades, which is a five year program, students continue to receive career information through the family living courses, and in the junior year through the consumer education course. Consumer education establishes the relationship of the individual in terms of his dual role of producer and consumer. This course realistically defines the career and the dollar, and teaches how that dollar can be put to better use.

In the upper grades, students are scheduled to a 90 minute time slot in the exploratory vocational phase of the career education program. In this program, students are rotated through a series of specialized vocational shops. This procedure provides the students with not only an appreciation of a variety of career opportunities, but also gives them the hands-on experience of actually learning the very basic skills of the various trades. This rotation continues until such time a youngster becomes a full-time vocational student, or selects a minor which accompanies his academic training.

Students seeking majors or rotating through the vocational exploratory program have the following list of areas from which to choose:

- Floriculture
- Auto Body Repair
- Metal Machine Trades
- Numerical Control Machine Tool Technology
- Typing
- Office Practice
- Advanced Business Machines
- Library Aids
- Child Development
- Home Care and Nursing
- Clothing
- Power Machine Sewing
- Drapery Making
- Food Services
- Drafting and Design
- Offset Printing
- Letterpress Printing
- Photo Reproduction
- In-Plant Printing and Cold Composition
- Linotype
- Residential Electricity
- Cabinet Making
- Upholstery
- Welding
- Heating and Ventilation
- Home Economics
- Pre-Vocational Exploration

A student selecting a vocational major usually does so at about age 15.5 to 16.5. Full-time vocational students are preparing for a career which they have selected from their previous experiences in the career education process. These students spend six 45 minute periods in the vocational area and 90 minutes in the academic department. Their academic work is not shop related, but rather is designed to provide students with the knowledge and skills they need as total beings. A series of short term mini-courses are being developed to accomplish this goal.

Vocational students are non-graded until such time when they have the maturity and skills to begin employment. A student reaching this stage of development is classified as a junior and, as such, is eligible for trial employment. During their senior year, most students begin this phase which consists of the student returning to his home and working on a full-time job. The advantage of this program is that we can watch the students progress on the job, and should a problem arise, the student can be counseled or if necessary brought back to school for additional training. Once a student graduates, there is little the school is able to do should a problem arise. Again, in keeping with our objectives of career education, we want to be assured that all school-leavers are established.

Academic graduates who chose not to go on to post high school education at another institution can return to school for additional schooling. These students major in one of the vocational areas and receive academic work in the advanced studies program. Advanced studies varies considerably from the traditional methods of organizing materials into subject areas. The program is multi-discipline in that it integrates subject areas into a meaningful whole. Through a problems approach, the students, in their quest for solutions, are exposed to cultural patterns and scientific and mathematical phenomenon. Major stress is placed on language expression and thought development.

In the over-all career education program there are several areas which should be stressed. Flexibility is one of the most important aspects of such a program. To provide the necessary career options open to the school population, a program cannot be over structured or unbending to the degree that a student becomes locked in. An example of this flexibility can be seen in the vocational areas. In an area such as floriculture, the program should be flexible enough to provide a wide range of training depending on a student's desires and abilities. The limited floriculture student may learn to work as a general landscape worker while the more capable student may learn procedures of greenhouse management. A successful program should provide the range for both of these students as individuals. In view of a changing school population, which includes a growing number of multi-handicapped youngsters, the planning of flexible programs is particularly important.

Along with program flexibility, it is of prime importance to constantly up-date programs. It is obvious that this is just good educational procedure, but it is sometimes more difficult than it appears. First, up-dating takes money and in terms of technical areas, large sums. At the Katzenbach School, we have been very fortunate to have an understanding state government, as well as the availability of federal funds. Retraining of staff, and in some instances elimination of areas, are other difficult factors to deal with, but deal with them we must if we are to provide the quality education our students need and deserve.

Career education at the Marie H. Katzenbach School for the Deaf is a many faceted program which, while in a constant state of flux due to individual and cultural needs, provides something for everyone. It begins with the child's first years in school, continues throughout his schooling, and if we have successfully laid the foundations, that once confused youngster will graduate with the abilities to continue the intelligent development of a meaningful career.

REFERENCE

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A TRAINING PROGRAM FOR PROFESSIONAL AFTER-CLASS STAFF IN RESIDENTIAL SCHOOLS FOR THE DEAF

Kendall D. Litchfield, principal, New York School for the Deaf,
White Plains

My task this morning is a pleasant one, one in which all of us indulge, but few with license to do so. I have been asked to "second guess"—I have been asked by Dr. Naiman to share with you not only my experiences, but my reactions as a participant in this training program.

To begin, let me assure you that I consider it to have been a worthwhile expenditure of my time and energy. This comes from one who traveled approximately 2,000 miles, spent 12 days away from his family, missed 15 school days in his office—and inasmuch as the school does not hire a substitute principal when I am away—the questionnaires, reports, and trivia unique with this lofty position just piled up. Don't run away, however, this will not be a flowery endorsement of a vested interest—I promise to "tell it like it is"—from my eyes at least.

What an interesting and diverse group assembled that first day in Maine. There were young and old, and a lot of degrees of in-betweens; the group was fairly evenly divided sex wise, and in our present "liberated" society there was quite obviously no advantage either way. The educational backgrounds of the participants varied from a high school diploma to Ph.D's. The leader, (and you will hear more about him later), was a psychiatrist, so we even had an M.D. present. There were deaf professionals, and hearing—even manualists and oralists. One young thing had less than a year's experience—and a lovely lady from St. Mary's had more than 25, again with the various levels in between. And to top it off—even a group of graduate students from the Northeastern Regional Media Center for the Deaf, University of Massachusetts, were present, in their efforts to video-tape the proceedings.

The diversities mentioned, are obvious and easily described—the more important differences and more difficult to discuss, were the tremendous ranges of understanding, the differences in attitudes, the complete lack of agreement about the management of children; sophistication, and lack of sophistication, concerning child growth and development. Piaget could have been a short-stop for the New York Yankees to some participants. If you believe that there is a stereotype of worker in our profession, forget it.

I have dwelt on this diversity of grouping, because I feel it is one of the great strengths in such an endeavor. Perhaps the essence of the year-long sessions are the intangibles each of us gained from such close association with such different people.

The actual sessions, well they were something else! And here I will discuss briefly our daily (and nightly) leader. Jack, and this is not a fictitious name (he would shoot me when he reads this if I insulted him by making him anonymous) is a psychiatrist and director of a Children's Hospital. He does not work directly with the deaf, and therefore has no preconceived biases, unless it is the bias that all children must be allowed to develop to their full potential. The active leadership that he provided is absolutely essential in such a program. I do not underestimate the planning that took place prior to the actual sessions, and New York University and Dr. Naiman are to be congratulated, but all would have been lost had not proper leadership, in this case in the form of Jack, been ever present. And, I stress ever present; he slept with us, he ate each meal with us, he drank with us, he prodded, cajoled, guided, comforted, (and discomforted) each of us. Don't attempt such a task if you do not have such a leader.

I mentioned leadership at the planning level and the active leader, the group also had the benefit of a few outside 'experts.' This concept looks good on paper, but it didn't work with the group dynamics of our workshops. Through absolutely no fault of their own, they were ineffective, largely because with their limited exposure they could never become a real part of the group, and secondly because at its best, a lecture is just not a very meaningful teaching tool. So, I caution you, beware of interspersing your sessions with 'experts'—the real experts are probably already there, your group itself.

Dr. Naiman explained the format of the sessions. Simple and direct, basically about 14 hours of group interaction, with some one-half of this time loosely structured. Breakfast, a formal session, visitation of host facility, lunch, formal session, dinner, and the evening 'cracker barrel' informal get-together. A clever—I am inclined to use the word devious—method of requiring all participants to become thoroughly involved, thus we were in effect forced to learn from each other.

The group had homework. Prior to each session, group members were asked to submit exercises. A typical homework assignment would have been to hold a brainstorming session with a group of dormitory counselors to come up with ways to provide a broader range of experiences for children, and allow wider opportunities for choice. These homework assignments met with limited success. Again, they looked good on paper, but my experience was that they were too artificial and I doubt that they were successfully implemented.

My paper is nearly finished, and it is time I get to the real question. Did anything of consequence happen at the five schools in the area of in-service training for after-class staff as a result of these workshops? I cannot presume to speak for all schools; I can report from the New York School for the Deaf and from incidents that I know from the other schools. *Yes*, things did happen, and most were positive. To begin, each school now recognizes that some sort of in-service training program is absolutely necessary, and that it must be planned. The skills, knowledge, abilities to do the job as an after-class staff member do not just take place, they develop only through input and by proper cultivation and feeding. Secondly, the various schools came to realize that their problems, (and strengths and weaknesses) were not unique with their school alone. There is something nice about not being required to burden a bad situation alone, collectively the answer is much easier. Thirdly, the group realized that the after-class staff in a residential school for the deaf are important people, that their contribution to the deaf child's education is measureless, *and* that we have only scratched the surface of their potential.

I believe that all schools did set up some type of in-service programs for their staffs. Three schools traded selected cottage staff for a three day period, an interesting innovation. A newsletter has been originated and will continue next year.

In closing, a potpourri from the experience:

1. Good interpreters are a necessity. In general, this was a good homogeneous grouping of skills and communication between deaf and hearing professionals; however, I still believe that even under such good conditions, an interpreter is invaluable.
2. Don't arrange your schools at too great a distance; probably three sessions will suffice.
3. Don't try it if you cannot break the "lecture syndrome." It is a complete waste of time if every member does not actively participate throughout. You can bring in all the "experts" in the field, and you will have little to take back to your schools.
4. Don't believe that one school, or one person has found the answer and therefore all you need is to emulate that program. Nonsense, your program is yours, you can learn from others and they from you. Incidentally, don't be modest either, your school has much to offer.
5. Use the publication, *Inservice Training for After-Class Staff in Residential Schools*, published by the Deafness Research and Training Center, at least as a resource. This is a good book. Use it.

6. And, be patient. It takes time and lots of it, believe me. Should your school try to develop an inservice training program for afterclass staff? Absolutely, you cannot afford not to. I recommend that you consider developing it collectively as these five schools did; if you cannot, at least develop one for yourself. "All the adults in a residential setting are educators," we can't neglect the opportunity to help them become even better educators.

A PROTOTYPICAL SYSTEMS MODEL FOR THE DELIVERY OF MEDIA SERVICES TO THE HANDICAPPED

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I. Introduction

I shall suffer my reader no unnecessary preliminaries in this discourse. What I wish to communicate is informationally oriented, problem directed and hopefully within the tradition of Joseph Pulitzer's advice to writers:

> Lay out your matter *briefly*, so that it will be read; *clearly* so that it will be appreciated; *picturesquely* so that it will be remembered; and, above all, *accurately* so that it will offer guidance.

The long range objective of this paper is to effect an attitude change in the minds of special educators, so as to arrest an increasingly evident trend toward expressions of technological apathy in the classroom. This expression of "the bloom has worn off" is a first step in the direction toward ultimate disillusionment with the curricular innovations ushered in by the new educational technology of the 1960's. For an illustration in point, the Ford Foundation (1972) recently published a forthrightly critical appraisal of what has resulted from its investment of $30,000,000 for the promotion of innovative classroom projects in various schools and programs during the past decade. Of the five major categories of projects sponsored, *educational technology*—which earlier in the decade had been heralded as approaching significant breakthroughs—presented one of the more disenchanting pictures. By 1970, instructional learning materials and their concomitant equipmental media were rapidly collecting dust in the basement storage rooms of schools. Unerringly prophetic were the utterances of Loughary (1966) and Cochran (1967) when they claimed that the traditional system of education was a "machine independent system." Such a system, they averred, could well suffer the removal of all its technological implementations without materially altering either the sophistication of its instructional levels or the learning achievement rates of its students.

An intermediate range objective that this discourse addresses itself to is renewing the case for the constructive employment of educational technology within the classroom. On one front this involves a re-examination of some of the major premises upon which educators have established their practices. Basically, in the past, the wrong questions have been asked:

> What can people do better than machines?
> What can machines do better than people?

A more proper querying stance would be:

> How can teachers use technology's instruments and programs to more efficiently accomplish the achievement of specific curricular goals and classroom objectives?

Since technology is simply the systematic treatment of an art, the technology of educational responsiveness must include all components that bear responsive relationships to the learner. Within this context, teachers along with their mediated tools of instructional assistance have some very obviously critical and joint roles to play. Admittedly, if the exceptional child is to witness his own power over things, he must be given the opportunity to become a manipulator of a significant part of his learning environment.

Another facet of this case renewal for technology involves the very substantive role the Federal government has been managing in effectively influencing the classroom environment of the handicapped learner. Not only has an extensive media support network been provided for special educators, but also there has been evolved a very definitive and discrete set of targeted goals outlining those missions that need to be focused upon if, by 1980, all handicapped children are to be receiving a responsive, individualized, humanized and learner-centered educational experience.

Finally, the most immediate and direct aim of this presentation is to describe within the contextual framework of the above concerns, the emergent structure of the National Center on Educational Media and Materials for the Handicapped. Through a highlighting of the parameters of the National Center's mandated mission objectives, management philosophy and operational task thrusts, there unfolds a very pragmatically oriented mechanism for bringing to fruition several of the Federal goals slated for achievement with the handicapped during this current decade.

In the society of the 1970's, the lives of our children have been very evidently shaped both consciously and unconsciously by a host of new technologies. Many of these technologies produced in the hectic wake of the Russian Sputnik launching, were aimed at bolstering a sagging educational system. In theory, they were potentially beneficial creations; in practice, they degenerated into mindless avenues of miseducation and superficial modernity. Rarely, if ever, was technology viewed in its true perspective as a process . . . a process capable of being blended within the fabric of a larger scheme of things—the educational system. Instead, technology came to be viewed by the educational practioner as an aggregate of discrete products.

Notwithstanding the negativisms and failures spawned by this simplistic thinking of the 1960's, a very valuable lesson has nontheless been learned:

> True instructional input cannot transpire through the application of superficial technological remedies—including the substitution of hardware and software for blackboards and textbooks.

The current and pressing mandate for change and improvement in the technological applications of learning is clear, and there is carried with it the very pressing need for a fundamental overhaul and redesign in our tradition-locked approaches to teaching/learning. The National Center will attempt to encourage this redesigning by emphasizing more the process nature of educational technology.

In summary, this paper will address itself to the following concerns:

(1) A synoptic portrayal of the Federal government's role in sponsoring programmatic services for the improvement of the education of the handicapped in the area of technology.

(2) A descriptive account of the National Center's operational commitments and management philosophy and the manner of its proposed impact on the special educational scene.

(3) A presentation of rationales for renewing the case of educational technology's use within the classroom.

A Renewal of the Case for Technology's Use in the Classroom

INTRODUCTION

The rationale for this final chapter derives from the premises that, irrespective of how persuasive the logic, impressive the programs . . . or equipment . . . or fiscal outlays may be, if, at heart, the educational practioner remains unconvinced of the applicability of technology to learning, or if the practioner is prone to the plagues of misconceptions, career security fears and role-identity crises relative to the teaching/learning/technology paradigm in education, then all is for nought.

Essentially, the problem being faced here is one involving noncatholic attitude parameters regarding (a) the psychologies of learning, (b) the promises of technology, and (c) how educational progress can eventuate from both in concert.

STANCES IN LEARNING-PSYCHOLOGY

The degree of importance that one attaches to instructional media and materials depends largely on how one views the nature of learning. With the appearance of a profusion of technological aids to learning over the years, it would ontowardly appear that reenforcement theory provides the basis for prescription in instruction. So monopolistic has the Stimulus-Response Model of learning been in the field that some psychologists have come to call it "learning theory", implying that no other conceptual model is possible. When reenforcement theory is put into educational practice, it does three things; (1) serves to teach what is already known, (2) promotes conventional conforming behavior, and (3) prepares students to live in a world exactly like the one in which they were educated. These mechanistic Stimulus-Response ideas are being replaced by a modern psychology that views man as being continually in the process of becoming and self-actualization. Hunt (1961) has produced an effective and extensively documented condemnation of the notions of fixed intelligence and predetermined development. Gordon (1966) schematizes this by illustrating (Fig. 1) the changing conception of human potentiality.

FIGURE 1.—*A comparative schema of the changing conception of Human Potentiality (Gordon, 1966)*

Newtonian Model Man	*Einsteinian Model Man*
A mechanistic, fixed, closed system characterized by:	An open-energy, self-organizing system characterized by:
(1) fixed intelligence	(1) modifiable intelligence
(2) development as an orderly unfolding	(2) development as modifiable in both rate and sequence
(3) potential as fixed, although indeterminable	(3) potential as creatable through transaction with environment
(4) a switchboard model brain	(4) a computer brain
(5) a steam-engine driven motor	(5) a nuclear power-plant energy system
(6) homeostatic regulator (drive reduction)	(6) inertial guidance and self-regulatory feedback-motivation system
(7) inactive until engine is stoked	(7) continuously active

He shifts the focus from a fixed, innately determined and mechanistic pattern to a dynamic and environmentally modifiable transactional view. The transactional model of Einstein implies interaction of person to person, or person to event, suggesting all the while that behavior cannot be understood apart from the situation in which it occurs. This permits man to be viewed as an active, competence-oriented, self-actualizing system. Man's development toward self-fulfillment will largely become a function of the nature and quality of his life experiences. Since the individual is shaped by both nature and nurture, and since the latter is within the province of education, then educators must become committed to the task of providing a learning environment capable of manipulation by and interaction with the student.

Students exhibiting growth deficits incurred from sensory and non-sensory etiologies of deprivation are less able to profit developmentally from the customary levels of environmental stimulation. Educators of the handicapped and especially those of the hearing impaired, agree that (a) it takes several years longer to educate their students than would otherwise be the case, (b) the communication of message-information units is perceptibly more difficult, (c) the student's participation in the learning process is eminently desirable, (d) sources of immediate feedback provided to the student-learner is self-encouraging, and (e) sources of feedback to the teacher/learner-manager is critical for the pacing and directioning of the future instructional effort.

In the instructional presentation of abstract ideas and relational propositions, it is necessary for technological aids to help provide more and better concrete manipulative opportunities. Dale (1957) presents (Fig. 2) a graphic interpretation of the inter-relatedness existing among various types of materials. Dale outlines these as occupying positions in the learning process with respect to the relative directness or remoteness of their experiences. In practice, many teachers focus in on experiences close to the cone's apex. In theory, learning approaches for the handicapped should initially transpire as closely as possible with the direct experience levels existing close to the base of the cone's arc. Realistically, where else could the abstract logically originate? The very definition, *to abstract,* denotes a pulling-out of something concrete, and connotes a representation of something

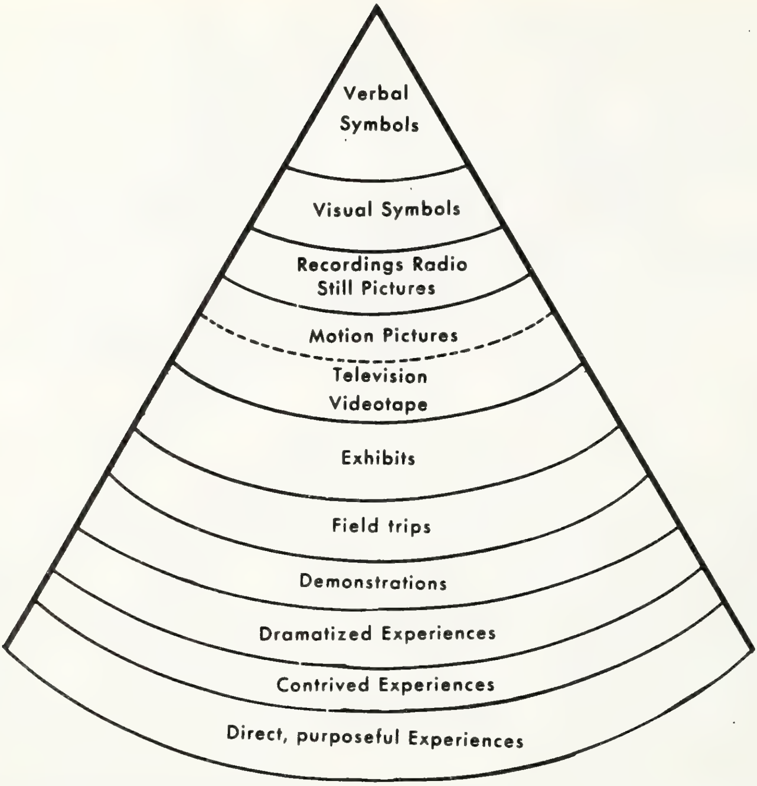

FIG. 2.—The Relatedness of Materials in the Learning Process with Respect to Their Directness or Remoteness of Experience (Dale, 1957).

that is real. The whole basis for abstraction then lies in the direct reality of the concrete. Obtuse, indeed, is the mind that cannot imagine technology providing intermediary steps between the concrete reality of an object and the correspondingly more abstract verbalization of that object's reality.

TECHNOLOGY AND EDUCATION

Though we have often heard the premise that teaching is an art, too few of us have entertained the statement's inference that education should, thereby, be a science. Education, when considered as a method of science identifies problem-needs and maps out means-ends. The end of education—to equip the student with the wherewithal for making an intelligent adjustment to life—is caught up intimately with *the* problem-need of education that *learning must be done by the learner.* Because a person's adjustment to life is an individual affair, a preparatory education for life must likewise be one that provides for opportunities of individualized learning and decision making experiences.

Education's effort to achieve individualization of instructional opportunity has left much to be desired. It has been prone to apply a potentially beneficial technology to an anachronistic end: the mass instruction of children in schools that are saturated with hardware and software. Technology, employed in such fashion, only intensifies its self-image as a destructive dehumanizing agent in education. Any science of education must fully recognize that individual needs simply cannot be satisfied by group methods. Such methods tend to obviate a very real and personal dimension of educational concern, namely, the teacher's knowledge of (a) how fast and how well a learner progresses, (b) why and through what steps a learner has failed to meet a criterion of progress, and (c) how alternative approaches can be used to reach individual needs.

Perhaps the real issue at work here is that educational technology has failed to be recognized as a *process* agent-of-change. Instead it has erroneously been identified with the hardware and software elements that abound everywhere in profusion. Such things do not constitute educational technology, but serve merely as the products of a variety of technologies currently used in education. Educational technology, seen as a process and developed to design alternative solutions for meeting individualized problem-needs produces hardware/software products to help facilitate the attainment of various learner-oriented ends. It is the process and not the products of educational technology that makes possible the opportunities that permit the learner to take an individual responsibility for attaining proficiency in his learning performance.

If educational technology as a process accomplishes all this, then (a) Who establishes the levels of proficiency attainment? (b) Who guides the student into using one of several alternative pieces of instrumentation? (c) Who, indeed, selects the various alternatives themselves?, and (d) Who instructs the students in the values and virtues of generosity, love, gentleness, compassion, social affection and human understanding? Rhetorical questions such as these force us to consider the role that the teacher is expected to command within the evolving technology-education schema. The role's definition lies in the process nature of technology. Essentially, what this new role does is to subordinate the instructional process to the learning process. It projects the teacher into the role of being a true learning-manager, coordinating and prescribing instructional sequences in the light of each student's functional level. Never should any doubt surround the fact that teachers will continue to remain central to the instructional process and that they will continue to make instructional decisions, even as to the employment or non-employment of technology at any given point in the teaching-learning sequence. Eurich (1969) sums up the matter:

> The teacher as purveyor of information, as drillmaster, as jack-of-all trades is obsolete. His/her new role will be that of a master of the resources of learning, and at last afforded the time and opportunity for the cultivation of students of individual human beings with the potential to learn.

III. SUMMARY

The tripartite purpose of this paper was (a) to effect a change of attitude in the way special educators viewed technology by emphasizing the *process* nature versus the product aspect of educational technology, (b) to illustrate the manner in which the Federal Government has provided an extensive media network consortium designed to optimize the availability of technological services to educators of the handicapped, and (c) to describe within the circumference of these concerns the emergent structure of the National Center, with especial attention being given to the Center's managerial philosophy and systems components.

One of the paper's more perduring themes was that while true instructional input could not transpire through the superficial application of technology, technology, in its process function, would nonetheless re-shape the roles of educators by subordinating the act of instruction to the act of learning.

An example of the process nature of technology in practice was presented by illustrating the National Center's efforts to service the instructional needs of the two Model Schools for the Deaf in Washington, D.C.

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THE CENTER FOR CONTINUING EDUCATION AT GALLAUDET COLLEGE—A PROGRESS REPORT

Thomas A. Mayes, Ph. D., dean, Center for Continuing Education, Gallaudet College, Washington, D.C.

When most of us went to school, our education system was built around the three R's. Now we are being challenged to think of the educational process in a new light; to think in terms of the three L's—Life Long Learning.

Life long learning, or continuing adult education, is a relatively new concept, coming at a time when we are forced to look at new concepts in many areas of life. We have too long thought of education as a preparation for life, and something that one must accept as necessary during his early years in order to contribute to society as an adult.

Today, however, we are starting to think of education as *more* than a preparation for life, because no one can really say that he has completed his education. No educational experience today can be considered terminal. For example, the body of knowledge in the medical profession is said to turn over every three to five years; so our very lives depend on doctors accepting the concept of life long learning.

It is appropriate that at a time when 25 million American adults are participating each year in some formal or informal educational activity that a strong attempt should be made to provide deaf adults with similar opportunities. It is also time that we began to cope seriously with the realities to which we are becoming captive, the need for upgrading of skills in the job market, the universal mandate on literacy, pressure for greater social awareness and leadership, and of course, the "creeping slob" syndrome, as examples (OH Projector). And we could do well to depart from the practice of theorizing about continuing education, and show what can be done in the way of action, even if on an experimental or demonstration basis, to begin with.

During this past year Gallaudet College established a Center for Continuing Education, and as a first step began a pilot program in the metropolitan Washington area. During the spring semester, we offered 54 classes and activities and drew over 800 enrollments. We like to think it was an exciting experience, not only for the people who enrolled, but for all of us at Gallaudet who organized the program.

If you can keep a secret and promise not to tell anyone, I'll admit that I think my staff and I learned more than all those 800 people who enrolled.

We learned much that should be understood about the professional milieu in which anyone wandering into continuing education today will find himself ensnared. We learned, for example, that continuing education is so relatively new as a profession that it has, in recent years, mushroomed into a complexity of agencies and funding sources, all bent on serving the same set of objectives. We have in all of our larger cities' school districts, community colleges, business and industrial firms, and other agencies which provide learning programs, often in an overlapping pattern, and with a confusion of administrative responsibility that often handicaps program success as far as real quality goes. For example, in some of our states today, there is a mounting struggle between school districts and community colleges over the control of both enrollments and available subsidies for adult programs.

We have learned also that the growth and duplication of programs only serves to increase the expectancy of the consumer. The consumer, the adult student, looks to education to provide the magic panacea for solutions to all our social ills, and when we spend our time and money duplicating resources and services, and competing for consumers, we lose out on quality, and as a result, increase the credibility gap between programs and the consumer whose needs they were designed to serve in the first place.

Disenchantment with this problem was demonstrated harshly this year when the Department of Health, Education, and Welfare sharply reduced the amount of money allotted to adult education demonstration and training programs. It turned a large share of these funds over to the states for revenue sharing.

Many people are fearful that adult education, as we know it now, is going to suffer because, traditionally, the basic education needs of children have held higher priority than the basic education needs of adults when it comes to distribution of state support. But, actually, I think it should be accepted as a challenge for more resourcefulness at the local level. It means that anyone who seeks to develop meaningful programs for deaf people must look carefully at cost factors and the practicality of utilizing resources now available in our local communities.

We learned, also, something about adult learning needs. We learned that deaf men and women want to move away from traditional classroom habits, and to participate in activities in which they can learn by doing. They demand flexible, practical, and relevant courses and classes, which meet their immediate interests. They want exciting and creative teaching. They want to realize an improvement in themselves and their self-worth.

Most important, we learned that, in addition to the fact that deaf people do want and need continuing education, there are responsible people in our professional field that want to help them, and that they are looking for realistic guidelines on how they can go about it.

We feel it is our responsibility at Gallaudet to provide these guidelines, first by developing a local program that works and which demonstrates holding power and measurable learning growth, and which can serve as a model. The valuable lessons we have learned, and which I have just described, guided the design of our program in Washington during 1973.

It is good administrative policy to have an organization chart so that responsibilities can be defined. Here is our organization chart, which is comparatively simple. All we have had this first year, in terms of staff personnel, is a program coordinator, Mrs. Judy Johnson, and an assistant. We have staff meetings whenever Mrs. Johnson and I sit down together, which is several times a day.

The courses and activities we have scheduled were based mainly on the needs expressed by deaf men and women living in the National Capitol Region. There are an estimated 3,000 hearing impaired adults in this area, which includes a cross section of the well-educated, educated, under-educated, and uneducated, and perhaps a larger percentage of the well-educated than can be found in most large metropolitan areas, because many Gallaudet graduates have remained in Washington. However, we are not without our share of unemployed and unskilled workers. Also among this population are housewives and a reasonably large number of retired persons. This population makeup, we feel, is ideal for a program reaching through a spectrum of needs, abilities, and ages.

There are a number of ways by which needs can be determined. One is through an advisory committee, and we do have one. Another approach is the use of interest questionnaires, and we have used these. (OH Projection)

However, the most effective method we discovered was a needs assessment instrument developed by Chico State College in California which was developed to determine program design and goals in local school districts. We revised this instrument by listing 18 major objectives which can be met by a continuing education program for deaf adults. The purpose of this instrument is to determine which steps to take first in the development of a local program. Here is an example of objectives. (OH Projection)

This instrument was administered to one hundred persons at a group meeting in September, a group made up of both deaf adults and hearing persons who work with them. The unique way in which this instrument is administered makes it possible for both individual and group choices, and through group discussions, realistic priorities emerge. This instrument has been tried with similar groups in New Orleans, Indianapolis, and Philadelphia, with what I would like to call quite effective results.

To help meet identified needs, we surveyed the Washington community and found that there were 13 school districts, community colleges, and universities in the area which each semester offered over 2,600 classes. In addition, the Cooperative Extension division of the U.S. Department of Agriculture has offices in the District of Columbia and each surrounding county. Each of these offices offers many fine courses in homemaking and consumer education. Religious groups, private agencies, and businesses support many more educational programs. In addition, Washington has a number of large and small private trusts or foundations which help underwrite worthwhile community projects.

I want to emphasize very, very strongly that this is not a situation unique to Washington, but one which exists in every major metropolitan area in the United States.

How adaptable are existing continuing education activities to the needs of deaf adults? How effective and acceptable are integrated classes? How useful are interpreting services? What special needs require special classes?

We found some encouraging answers.

During the fall semester, we advertised 21 courses and activities on a flexible format. Some met once each week for 10 or 12 weeks. Some were one-shot, one night activities. Some were short courses lasting three or four sessions. Each course was selected or planned around specific content and the time needed for effective delivery. These courses attracted a total of 341 enrollments.

Because we played a catalytic role by initiating classes within existing programs or integrating deaf persons in ongoing classes, the total teaching bill for the Center for Continuing Education came to exactly $152.00. Cooperating school districts and extension programs paid the rest.

Our interpreting bill was paid in part this year by a $2,000 grant from the Cafritz Foundation, a trust fund which helps to increase the effectiveness of a variety of local programs with contributions amounting to a few thousand dollars each.

Here is a list of courses offered during the spring semester with accompanying enrollment figures. (OH Projection with comments). I would like to show several slides we made of different classes to give you a better "picture in the head" as to what we are doing and what Washington people are learning. (Slides with comments).

I would like to discuss briefly a few mechanical items in program development which may be helpful to anyone wishing to organize classes elswhere.

ENROLLMENT FEES

In our program in Washington, enrollment fees vary from course to course, and are in accordance with varying fee rates established by the cooperating sponsors. Basic education classes are tuition free, as are the programs offered by the Cooperative Extension division offices. Hobby, homemaking, and skill classes generally come to $10.00. Students enrolling in regular credit classes offered by Gallaudet College—for example, math classes—pay the regular tuition fee.

We find that course fees are not a deterrent to enrollment. Moreover, students who pay fees to join a class will maintain good attendance to get their money's worth.

INTEGRATION

Purely academic courses, such as basic education and literacy training, will require special attention, although we do have some integration here. Teachers in existing public school sponsored programs who have no orientation to working with the deaf are assisted by graduate students at Gallaudet who serve as teacher aides.

Information we received from questionnaires distributed this spring indicate a 2 to 1 preference for integrated classes over those for deaf persons alone.

COOPERATIVE PROGRAMS

Of all the agencies with which we worked this year, the most responsive were the public school districts which offer programs most relevant to the greatest number of people. The Cooperative Extension division which operates a nationwide network and which can help people in rural areas, is extremely valuable, and its programs are free. University extension programs, although offering an excellent variety of courses, are rather expensive and many are credit-oriented, meaning that admissions requirements must be met. Since extension divisions in the Washington area universities generally are self-supporting through tuition fees, it is not unusual to find course fees coming to $70 or $80.

EVALUATION

No program in continuing education can be successful without a share of paper work. At the end of each class our students are given evaluation forms which seek information as to course relevance, teaching, and interpreting performance. Here is a chart which tells us something about each class and its effectiveness (OH Projection and comments).

Interest among deaf adults in Washington has been lively. Almost daily we receive requests for more courses, classes, activities, and programs. We know that when deaf people are involved in the planning of their own educational programs, and as long as programs are exciting and at the same time immediate to needs, and as long as the program is cognizant of travel time and of the comfort needs, such as good lighting, adequate parking space, and as long as we provide a social by-product with time allowed for people to get acquainted and to discuss common interests, a program will have holding power. These are important considerations.

Many people have asked how the Center for Continuing Education may extend its services beyond the National Capital Region and help make possible similar programs in other states and communities. We hope to move strongly in that direction during the next year.

Although the center does not have funds for direct aid to other communities, it can offer much that can be helpful. Anticipated additional staff includes a coordinator to develop teaching packages in general areas such as literacy training, basic education, and high school equivalency studies (OH Projection).

These packages will be first tried in our own program in Washington and then made available for use elsewhere. Already in the preparation stage is a literacy teaching package which is being developed by Mrs. Virginia McKinney of Los Angeles, who is under contract to use. Also under contract with the National Association of Public and Continuing Adult Education, is a high school equivalency program built around the General Education Development test.

These materials will be rather specialized in content. Much has been produced by various publishers in the teaching of reading and other basic subjects, but not all are suitable for the teaching of deaf persons. All known literacy teaching materials, for example, are built around phonics and without the kinesthetic feedback needed for work with the deaf. Mrs. McKinney's materials will capitalize on this.

This spring we received a $50,000 grant from the Charles Stewart Mott Foundation of Flint, Michigan to begin some original and exploratory work in what we call community education (OH Projection). We are now seeking a qualified director for this particular project.

The community education movement has spread to 600 school districts throughout the country and 18 colleges and universities are now offering community education administration training as part of their graduate education curriculums. By 1975 it is expected that the concept will have been adopted by 1500 school districts.

Community Education, basically, is an expansion of the traditional K–12 program which makes school buildings centers for lifelong learning. A community school, ideally, is open from eight in the morning until 10 at night, six days a week, 11 months of the year. It is a clearing house for neighborhood or community needs, and answers to these needs by mobilizing available community resources to meet them. Experience has shown that these expanded programs cost on the average six percent more than the standard school program, but may bring the taxpayer as much as 100 percent more in return for his education dollar. This is not unrealistic since publicly owned schools have the necessary facilities and trained personnel to serve many more people than under a traditional program.

Our community education center director will work closely first with the Kendall and Model Secondary Schools on Kendall Green, and with other day and residential schools in the Middle Atlantic States in an attempt to initiate model programs. We feel that schools for the deaf have much in the way of potential leadership which can make possible continuing education programs in their respective regions. We feel, also, from long experience, that the area of special education has much to gain through expanded community school programs.

Another big step we will be taking this coming year is an internship training program for professionals new in the field of continuing education and/or education of the deaf. We have openings for five people for the month of October and five for the month of March. (OH projection.)

We are looking for persons who are now employed in schools for the deaf, or in city or state continuing education programs, and whose employers are seriously considering setting up educational activities for deaf adults and who want persons on their staffs to gain practical, on-the-scene experience in program planning and management.

Gallaudet College will provide board and room for interns during their four weeks on campus.

The internship program, as it is projected, will offer each participant an opportunity to learn about program organization, financing, dissemination, and evaluation through participation in the operation of our Washington program, along with an introduction to the special educational needs of deaf adults and communication skills training as needed. Seminars with representatives from various branches of the federal government and from related national organizations headquartered in Washington will also be part of the training experience. We would like to offer as broad an exposure as is possible within a month's time, to our demonstration program, the developing training materials, the community education approach, and other obvious resources, so plentiful in our nation's capitol.

We hope that our strategy will be effective in making meaningful continuing education programs possible for the thousands of deaf adults throughout the United States who rightly deserve equal educational opportunities and the chance for occupational, economic, social, and cultural advancement they will bring.

GALLAUDET COLLEGE—PRESENT AND PROSPECT

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With the time allowed I would like to discuss briefly some of the programs and services new or planned at the College which are not necessarily purely academic but which are very characteristic of Gallaudet's new long range mission.

In 1970 the Commission on the Role and Function of Gallaudet College recommended in a report to the Board of Directors that the College become a multipurpose institution, that it should broaden its service base to meet immediate and important needs of deaf people of all ages. It should pattern its work much in the way a land grant college serves its constituency.

During the past three years the College has begun to move vigorously in that direction. Although the number of services it can and will perform is still growing, its service range is now complete. It now offers leadership in the development of programs for preschoolers, elementary and secondary school youth, college students, graduate and professionally oriented people, and to the general public through continuing education and public service programs.

In each of its responsibilities Gallaudet College recognizes four priorities which challenge the field of higher education in the U.S. today. They are the need for:

1. Non-traditional education
2. Career Education
3. Community Service
4. Lifelong learning

The time for theorizing is past. A visit to our campus today will reveal active programs which are timely, vibrant, exciting.

Dr. Schuchman and Dr. Delgado have explained in some detail the work of the undergraduate and graduate programs and I would like to touch upon those activities which fall under the heading of community service and lifelong learning.

A year ago the College established a center for Continuing Education. Yesterday I gave a detailed description of our demonstration program in Continuing Education which was developed and is now moving along in the Washington area. This program has a goal of reaching at least 20% of the 3,000 deaf adults in the National Capitol region each semester and providing them with academic, occupational, cultural, and social opportunities long available to the general public.

We have developed this program in cooperation with neighboring school districts, community colleges, and private agencies whereby these cooperating parties pay 80% of the operational cost of the total program, which includes teaching and support service costs.

We feel that before we can go to other communities in other parts of the country and help them develop continuing education programs for deaf people we must first demonstrate that it works in one community. If it does work then we will find more credibility in a nationwide program.

Next year we will be developing and testing teaching packages in our classes in Washington which will eventually be made available to local programs elsewhere. We will also be providing consultation and training to residential and day schools for the deaf which have an interest in providing leadership in their respective regions in the organization and coordination of continuing education projects.

In addition we will offer an internship training program for people who want practical on the scene experience in the planning and management of programs. Internships will be offered to people who are now in either education of the deaf or are working in adult education at the community or state level and who wish to set aside a block of their professional time to the area of adult education for the deaf. The internships will cover a month's time and those interested may come either during the month of October or the month of March. There will be no cost to the participants. I have circulars giving more detail on these training programs and do ask for one if you are interested.

The College is playing an expanding role in public service by making its corporate talents and research available to a widening audience. Workshops in updated administrative practices for hearing impaired persons in executive roles, and conference for education and health officials on the menance of Usher's syndrome are examples of activities offered this year.

The Office of Sign Language programs has published a teaching textbook to support its growing program in teacher training and interpreter training. Under the direction of Willard Madsen the outreach of this program is becoming national in scope.

Cultural programs at Gallaudet are reaching international audiences and are providing more people with a better understanding of deafness and a greater awareness of the potentials of deaf people. The eight Gallaudet Dances, a modern dance group under the direction of Dr. Peter Wisher appeared at the Fourth International Conference on Deafness in Israel this spring. Their appearance was one of the highlights of the conference and created a refreshing image which won for us many new friends. Their own fund-raising drive made the trip possible.

Coming years should see a growth in the number of summer programs coordinated by the College. The need is clear for training programs for paraprofessionals and support service personnel as well as for those in teaching, counseling, and administrative roles. The College's growing faculty which now includes 55 earned doctorates embodies the potential necessary to provide orientation and updating in all areas related to the education and welfare of deaf people.

Some attention should be directed to the work of the Office of Alumni Relations at the College which is under the direction of Jack Gannon. Among many merits the office has built a Graduate Fellowship fund, the principal of which is the excess of $200,000. This fund has, to date, aided 18 deaf persons in doctoral studies. This one item of alumni support of the mission of the College will undergird the activites of the Office of Development which this year established a Resources Council. This council will be working with both college and non college communities in developing private financial support for the College's long range growth.

Underlying all of the activities I have just mentioned is a very strong emphasis on quality and accountability which is borne out in our New Master Plan which was drawn up this year under the direction of Dr. Orin Cornett, Dr. David McGuinness and Mrs. Carol Boggs. The final document includes management by objectives in five general areas: Student Development, Professional Development, Research, Service, and Stewardship. Nearly every member of the staff and faculty of the College and precollege programs were involved in the design of this master plan. Each course of study has been designed or redesigned around behavioral objectives to ensure measurable progress and learning growth.

Gallaudet College and its programs are not static. What the College is now and what it will be in the future are and will be determined by the needs of deaf people.

On behalf of President Merrill and all of us on Kendall Green I want to extend to each of you a very special welcome to drop in and visit us especially at this time of the most dramatic change and retooling in our 109 year history.

THE 1973 ANNUAL REPORT—THE NATIONAL ADVISORY COMMITTEE ON EDUCATION OF THE DEAF

Nanette Fabray MacDougall, presiding chairman

The National Advisory Committee on Education of the Deaf was created under Public Law 89–258, in October 1965, to serve as a continuing advisory group to the Secretary of Health, Education, and Welfare for the purpose of advising and assisting the Secretary with respect to the education of the deaf.

The membership of the Advisory Committee shall include educators of the deaf, persons interested in education of the deaf, educators of the hearing, and deaf individuals.

This Committee is governed by provisions of (20 U.S.C. 1233) Part D of the General Education Provisions Act (P.L. 91–230), and Executive Order 11671 which set forth standards for the formation and use of advisory committees.

In carrying out its functions, the Advisory Committee shall (A) make recommendations to the Commissioner and the Secretary for the collection of data to facilitate evaluation and problem identification; (B) identify emerging needs for the education of the deaf and suggest innovations to meet such needs or otherwise improve education for the deaf; (C) suggest promising areas for inquiry to give direction to Federal research in the area of education for the deaf; and (D) make such administrative and legislative proposals as may be appropriate.

PRIORITY RECOMMENDATIONS OF THE NATIONAL ADVISORY COMMITTEE ON EDUCATION OF THE DEAF

Dr. Frank Withrow, Executive Secretary, National Advisory Committee on Education of the Deaf, Bureau of Education for the Handicapped, Department of Health, Education, and Welfare

The National Advisory Committee on Education of the Deaf considers that there are basic rights to which all deaf persons are entitled. These rights are implemented through a multi-agency sharing of programing and financing by private, local, state and Federal authorities. These basic rights shall include:

> An individualized program of instruction and services at whatever age and in whatever educational setting the effort is likely to decrease the possibility of isolation from society and maximize a sense of personal well-being, good citizenship and economic usefulness of deaf individuals.
>
> Early educational programs for deaf infants and their families should be available as soon as a hearing loss is identified.
>
> Educational placement of a deaf child should range from the neighborhood school to special classes, special schools and/or residential schools.
>
> Each child should have the opportunity to develop a comprehensive range of communications skills which allows for them to operate as a citizen with maximum efficiency.

A program of career education which emphasizes the work ethic and independence from the earliest age. All deaf children or youth leaving school should be prepared to enter the world of work or to continue advanced preparation for the world of work.

Informational and cultural avenues should be made available to the deaf population on an equal basis as it is to the hearing population. Telecommunication devices should be accessible to the deaf at the same cost as telephones are to the hearing person. Captioned television and motion pictures should be expanded to include at least 80% of that available to the general population.

Special public or private schools, institutions, or agencies that provide preschool, primary, secondary or post secondary educational programs for deaf people should allow for a continuum of alternative programs which include:

(1) technical assistance for the student's regular class room teacher,

(2) supplementary instruction and therapies for the deaf student,

(3) resource staff and materials to assist deaf students through part-time special classes and resource rooms,

(4) full-time special classes for the deaf,

(5) day school or residential schools for the deaf,

(6) home and hospital instruction for the multiply handicapped deaf.

The Committee recommends to the Secretary that the Federal government should continue to provide a leadership role in the development of basic rights for deaf people.

The Committee recommends the following four new areas of action that should be initiated by the Department of Health, Education, and Welfare.

1. The development of a complete range of educational programs for multiply handicapped deaf children with a special emphasis on deaf, mentally retarded children.
2. The calling of a White House Conference on Handicapped not later than 1976.
3. The establishment of a center for the performing and creative arts for the handicapped under the National Foundation of Arts and Humanities.
4. Federal distribution of telecommunication devices such as hearing aids, television phones and other communication interfaces that may be developed to enable more effective communication by the deaf.

STATUS OF EDUCATION OF THE DEAF

There were approximately 55,000 school aged children enrolled in schools and classes for the deaf in the United States of America in 1973; *only 49.7% of whom can be classified as deaf by unaided audiogram.* The hearing loss in these children is sufficiently severe to preclude the development of an auditorily based communication system; therefore, many of these children develop their symbol system through the sense of vision. This visual symbol may take the form of speech reading, language of signs, print, finger spelling or a combination of the above which is commonly referred to as total communication. With amplification these children may also receive additional training help in the development of speech and language. Auditory training when it is begun in infancy and when it is coupled with a receptive family environment may establish a symbol system based upon auditory input to the residual hearing. To be effective this must happen early in life, i.e., it should begin within the first six months of the baby's existence. Without the normal spontaneous development of language and speech that is found in the hearing child this target population represents a severe educational problem for the local education agency. The human potential of deaf children is great since their physical and intellectual abilities are comparable to the average child if education is provided early.

Slightly less than 50% of the deaf children within the United States are enrolled in residential schools for the deaf. The rest are enrolled in day schools and classes for the deaf. All education of the deaf child is expensive since it must begin earlier than for the child's hearing peer and in some instances continue long after his hearing counterpart. Day schools and classes cost 2.5 to 3.5 times the average per pupil cost in most school districts. Residential schools cost five to six times the average per pupil costs. Each year about 3,600 deaf youth graduate or leave our programs for the deaf. Between 500 to 800 of these school leavers will continue on in post secondary programs for the deaf or in some instances hearing colleges or universities. The academic and language achievement of the average deaf school leaver is some three to four years behind his hearing counterpart. The current enrollment of post secondary students is slightly more than 2,400. The bulk of these students are in attendance at either Gallaudet College or the National Technical Institute for the Deaf. A small percentage are enrolled in regular college programs for hearing students.

The importance for early education of deaf and hard of hearing children regardless of the hearing loss is a key factor in the eventual competency of the deaf adult. The use of quality high fidelity amplification systems can significantly reduce the dependency upon vision for the development of a language system. The synergetic use of sound and sight at the earliest age will provide the best possible chance for good language and communication skills.

The problems of the deaf and/or hard of hearing child require a reassessment of local, state and Federal relations. Of utmost importance is the age when education is begun, the educational environment in which the child is placed, the training of both general and special educators, research into the learning patterns of hearing impaired children and the need for regional and national programs for the deaf. To better understand our present programs it is worthwhile to look at the historical development of education for the deaf in America.

The history of education of the deaf in the United States is well over 100 years old. In the early and mid 1800's residential institutions were founded in the eastern United States in the more densely populated areas such as Massachusetts, New York and Connecticut. Most of the early schools were private and enrolled children from the entire nation in order to attract sufficient numbers to allow for an economic, efficient operation. In the early 1900s. as the population densities increased in major metropolitan areas, schools for the deaf were established in New York City, Boston, Detroit, St. Louis, Chicago, Los Angeles, and other major population centers. Today slightly more than 50% of deaf children attend school in their home communities.

Education of the deaf is characterized by being a labor intense and technologically rich endeavor. In most programs there is on the average one teacher for every 7 to 8 children. These teachers require more specialized training than regular teachers. Amplification devices for both sound and sight are required to meet the minimum standards for an adequate educational environment. In addition supervisory and support staff includes such specialists as psychologists, audiologists, electronic technicians, social workers, and media specialists. In residential schools houseparents, child care workers, recreation personnel and dietary personnel are also part of the staff. These are all factors that add to the increased cost of education for deaf children.

As a result of the high unit cost and the relatively small population of the target group, larger political subdivisions such as state and Federal Governments have been called upon to finance and operate programs for the deaf. This economies of scale is evidenced in state schools for the deaf, Gallaudet College, and the National Technical Institute for the Deaf. In most states day schools and classes also receive special financial assistance from the State Education Agency.

Costs of preparation of personnel and implementation of programs of education increase with the severity of the handicapping condition of the pupil. The more severe the handicap the greater the drain is upon the local educational financial and professional resources. Resources for some deaf children are so scarce that entire families move from low density population areas to metropolitan areas. Not only do they move from city to city but from state to state. Frequently this increases unjustly the tax burden of major citees which have established programs. Many of these cities have major crises in education because of other urgent needs. Such migration has a negative effect upon cities and states that have provided adequate programs. Frequently this migration so overcrowds their facilities that they become substandard. Some states allocate as much as four times more financial resources to education of the deaf than others. The manpower in these states is better trained and more comprehensive. Transfer among states of school aged children places an unequitable burden upon those states that devote adequate financial and personnel resources to education of the deaf. In some instances educational failures become tax burdens, therefore because of the mobility of the American population the educational failure of one state may become the life time burden of another state. This problem of scale is a national problem that can only be solved through creative interaction by each part of the nation sharing its responsibility, i.e., Federal, state, and local resources.

As education is extended to more children it is likely that the state and Federal Government must assist even more than in the past. There is a trend toward including all children in the benefits of education. Today with better health care the multiply handicapped deaf child is more likely to survive than in the past and his parents now expect him to be educated. Multiply handicapped deaf children are few in total numbers and more costly to educate than deaf children; consequently the problem of scale is even more acute than for the normal deaf child. For example the total population of deaf-blind children in the nation is estimated at 4,500 children. The estimated costs in programs such as the world famous Perkins School for the Blind is in excess of $18,000 per child per year. Even our largest states have not on their own resources developed programs, nor do they have large enough populations, to warrant services for these children. It is only through a partnership with the Federal Government that these children are beginning to receive services. This program takes advantage of both state and national resources.

The deaf-retarded are one of the most neglected groups of deaf people. They have the doors of both schools for the deaf and schools for the retarded closed to them. Many such children are vegetating in the back wards of hospitals or sitting at home in the dark corners of lost hope. In the late 1960's Hospital Improvement Programs and

ESEA Title I (P.L. 89–313) funds provided demonstrations of what could be accomplished with these children. Some deaf-retarded children achieved such skill in self-care and communications that they were able to return to their home communities. Unfortunately, states have not chosen to continue these programs once the Federal monies have been withdrawn. Cutbacks and economies in state governments have frequently cut these programs out first. Such multiply handicapped children are often wards of the state and have little or no voice at the seat of the decision makers. No child should be forgotten anywhere in the United States of America.

The contribution of the deaf person to American society is about equal to that of the general population. Deaf people have achieved professional status in the sports world. They are for the most part hard working people who contribute their fair share of taxes. Some like Mabel Hubbard Bell were major contributors to the advancement of science. Mrs. Bell was an avid sponsor of research into early aviation in this country. The contributions to the quality of life of countless Americans who shared the sensitivity of a life like Helen Keller's is unmeasurable. Miss Keller's courage and triumph over her handicap is a classical example of a moral force within our society. The problems of deafness are best expressed by a direct quote from her writings.

> The test of all beliefs is their practical effect in life. If it be true that optimism compels the world forward, and pessimism retards it, then it is dangerous to propagate a pessimistic philosophy. One who believes that the pain in the world outweighs the joy, and expresses that unhappy conviction, only adds to the pain. Schopenhauer is an enemy to the race. Even if he earnestly believed that this is the most wretched of possible worlds, he should not promulgate a doctrine which robs men of the incentive to fight with circumstance. If Life gave him ashes for bread, it was his fault. Life is a fair field, and the right will prosper if we stand by our guns.

Today thousands of deaf people have achieved dignity through the work ethic in industry, creative arts, government and numerous other achievements. They are intellectual and tax producers for the nation rather than tax burdens. Their achievement has come from their opportunities for a wide range of education from preschool through post secondary to continuing education. Deafness is a severe handicap but it does not need to become a limitation to a persons' achievement of independence and accomplishments.

Review of National Advisory Committee on Education of the Deaf—Activities and Programs Effecting Education of the Deaf

FEDERAL PROGRAMS FOR THE DEAF

Over the past fifteen years Federal programs that relate to the deaf have expanded from a trickle concerned with captioning of motion picture films to a comprehensive balanced program that includes personnel preparation, research, services, and educational technology. The first of these programs became operational in 1958 under P.L. 85–905 which created Captioned Films for the Deaf. Soon after this, P.L. 87–276 created a teacher training program to train teachers of the deaf. Much of the existing manpower in schools for the deaf today has been trained under this authority or the subsequent P.L. 88–164 which expanded training to all categories of the handicapped. This law also established research and demonstration authority to study handicapped children. Research into learning and deafness has been encouraged under this law.

The first direct service grants came about through the P.L. 89–313 amendment to ESEA Title I which provides services for children who are in programs totally supported by the State Education Agency. Subsequent laws brought about services to deaf-blind children through the deaf-blind centers authority and centers for model early education programs.

Most of the above mentioned laws were codified early in the Nixon administration into a law (EHA P.L. 91–230) which coordinated all programs for the handicapped into a uniform law with a balance of personnel preparation, research and demonstration, model centers, service and education technology.

The Education of the Handicapped Act did not include the service monies that come from the set asides in other laws, therefore, they are not reflected in the total budget for this act.

The implications for the education of deaf children can be seen in a breakdown of the funds that serve the deaf from Education of the Handicapped Act and the set asides:

EHA Public Law 91–230	Dollars for the deaf	Total fiscal year 1973 estimate
EHA pt. B: Day schools and classes	$2,000,000	$37,500,000
EHA pt. C:		
Early childhood model centers	1,000,000	12,000,000
Deaf-blind centers	10,000,000	10,000,000
EHA pt. D: Personnel preparation	3,000,000	36,500,000
EHA pt. E: Research and demonstration	1,000,000	10,000,000
EHA pt. F: Educational technology and captioned films	7,000,000	13,000,000
EHA Total	24,000,000	93,000,000
Set-asides:		
ESEA Title I (Public Law 89–313) State supported programs	10,000,000	54,000,000
ESEA Title III	1,000,000	20,000,000
Vocational Education Act	3,000,000	40,000,000
Total set-asides	14,000,000	114,000,000
Total State moneys available from Federal programs for education of the deaf	38,000,000	

Note: All figures are estimates at this time since the appropriation bill has not yet been passed at the date of this report.

SPECIAL INSTITUTIONS

Kendall Demonstration Elementary School

The Kendall Demonstration Elementary School now has an enrollment of 174 pupils. No new funds have been appropriated for this school other than for planning activities. The present plant has been modified so that there are open school facilities in one wing enabling a demonstration program to be established. The school will ultimately be a model of pre-school and elementary programing for an inner city population. Parent participation and community interaction in the development of this program are considered essential to the demonstration aspect of the school.

Model Secondary School for the Deaf

The agreement between the Department of Health, Education, and Welfare and Gallaudet College, to establish the Model Secondary School for the Deaf, was signed on May 16, 1969. Since that time the school has become operational in temporary quarters. Currently 110 students are enrolled in the school. There are 72 members of the instructional staff. This staff works closely with the support staff to create instructional packages for individualized instruction.

The design of the permanent facilities is now complete and the request for construction bids has been made. Bids were opened on March 21, 1973. Anticipated completion of the new buildings is September, 1975. The enrollment once the facility is completed is expected to be 600.

National Technical Institute for the Deaf

The National Technical Institute for the Deaf of Rochester Institute of Technology is moving towards completion of their construction phase. The builders anticipate that they will finish ahead of schedule and be able to turn over the buildings to NTID by the fall of 1973. The current enrollment is 366 students. Once the new facilities are in use NTID can accept 750 students.

The interaction between deaf and hearing students at NTID/RIT is one of the most attractive features of this program. Not only are deaf young people learning to live and work with hearing people, but the hearing community is better able to understand and accept deaf people as equals in the world of work and in the community.

Gallaudet College

The College has moved into a new period in its second century of service to deaf people. While the College remains the only College in the world that is exclusively designed for the deaf there are now 27 other post secondary programs that offer some support services to the deaf student. Gallaudet College of course remains the leader in this area with slightly more than half of the 2,300 plus students.

Of particular interest this year is the expansion of the continuing education program within the Washington, D.C. or National Capital area. Dr. Thomas Mayes has developed an open community program that takes advantage of all of the existing community resources. One excellent aspect of this program is the Gallaudet Forum which is a four lecture series for both hearing and deaf people on accountability in business, the press, government and sports. The speakers were Joseph Danzanski, community leader and President of Giant Food Stores, Inc.; Katharine Graham, publisher, Washington Post; Senator Harrison Williams, New Jersey; George Allan, head coach, Washington Redskins. This program is excellent for both the Washington Community and for deaf people.

Deaf-Mentally Retarded

The Task Force on the Deaf-Mentally Retarded, chaired by John Melcher held joint meetings with the Office of Mental Retardation Coordination, The President's Committee on Mental Retardation, and the American Speech and Hearing Association in November, 1972, and January, 1973. The report of these meetings will be issued as a challenge and charge to the nation through the Secretary's office. The report will emphasize the need for comprehensive programs to be developed for this neglected population. The feeling of the participants was that there is knowledge available concerning this population which can become the basis for action programs in service, research, and training.

The Task Force estimated that there are between 10,000 to 15,000 deaf mentally retarded individuals in the United States who can profit from educational programs. The paper will call for the development of a range of programs leading to self-sufficiency within the normal community to sheltered work and living environments for deaf-retarded people.

Center on Performing Arts for the Handicapped

The Task Force on Performing Arts and the Deaf was chaired by Mrs. Nanette Fabray MacDougall. Recommendations from this Task Force suggests that the National Foundation for Arts and Humanities support the development of a center for performing and graphic arts for the handicapped. Such a center would work closely with the entertainment industry to assure an interaction between professionals and handicapped creative young people. There would be an opportunity for the establishment of liaisons with the film industry, screenwriters, theatre, dance, graphic art, and fine art groups.

BEH-NACED SITE VISIT TO THE VIRGIN ISLANDS

In conjunction with the Bureau of Education for the Handicapped a joint visit was made to the Virgin Islands at the request of the Chief State School Officer. This request was stimulated by a crisis in the education of deaf children in the Islands. During the past school year the staff working with deaf children resigned in midyear and left the schools without appropriate teachers, therefore the children were sent home to sit out the school year. The Task Force was able to meet with Public Health Services, State Education Agency, and the school personnel on both St. Thomas and St. Croix, Vocational Rehabilitation counselors, the College of the Virgin Islands, Educational Television personnel, and staff from the Governor's office.

The resulting report provided the Islands with recommendations for developing a self-sustaining program of education for deaf children. Since the visit, reports back to the Task Force have indicated that action steps are being taken to bring education of the deaf into the mainstream of education within the Virgin Islands.

CONVENTION FORUMS

In cooperation with the National Advisory Committee on Handicapped Children, the National Advisory Committee on Education of the Deaf is scheduled to have representatives at all conferences and conventions so that parents, professionals, and other interested parties may bring to the members' attention concerns of the public with respect to Federal programs for the handicapped and/or deaf.

NACED MEMBERSHIP AND STAFF

With the appointment of three new members of the National Advisory Committee on Education of the Deaf, membership was at its approved 12 members in December 1972. Mrs. Nanette Fabray MacDougall was appointed Chairman of the Committee succeeding Dr. Harriet G. Kopp in this position. The three new members are Dr. Victor H. Galloway, Dr. Winifred Nies Northcott and Mrs. Barbara B. Sachs.

On December 10, 1972, Dr. Frank B. Withrow was appointed Executive Secretary for the Committee. Mrs. Linda Kinney remains staff assistant to the Committee.

Meetings of the full Committee were held in Seattle, Washington, on September 29 to October 2, 1972, and in New York City on May 10–12, 1973. An orientation meeting was held for the new members on February 20–21, 1973, in Washington, D.C.

SUMMARY

Education of the deaf in the United States of America has had a long history of cooperation among private, local, state, and Federal resources. Private programs frequently led the way to new and enriched services and standards of living. Once state governments realized that it was in their self interest to educate deaf people they established State residential schools. As the society became more mobile and population centers became more dense schools and classes for the deaf were established within local school districts. Currently there is a move towards regional secondary school services within major population areas such as Chicago and Boston which are cooperative arrangements among local school districts. The Federal Government has remained active at the post secondary and continuing education level but considerably less so for adults than for children.

Today there is a blend among local, state and Federal resources that contribute to the success of programs for the deaf. The Federal responsibility increases as the numbers of recipients decreases and as the per unit costs increase. This problem of scale is one that requires a critical mass of activity to become economically feasible. For example captioning of films or television is so costly on individual basis, i.e., a single film that economies are realized only in large scale national operations with standardized procedures and formats.

As the American society has increased in complexity and as mass media has increased the information flow the deaf person has become relatively more disadvantaged. Increases in electronic communication has not been of an equal advantage to the deaf person that it has to the hearing person. The deaf high school graduate in 1973 may have achieved significantly more in academic knowledge than the deaf graduate of 1943, but finds that he is further behind with respect to the hearing high school graduate in 1973 than he was in 1943. The information and learning available to 1973 hearing students has grown at a more rapid rate than it has for the deaf student.

In reality, in an information-rich society the advantaged increase at a greater rate than the disadvantaged. This is doubly so with the deaf person since the vehicle for increased information flow is based upon electronic auditory data flow which the deaf person must learn to use in alternative forms.

All of the above leads the Committee to recommend earlier education and prolonged opportunities for the deaf person. The Committee is aware of the need to expand and enrich the cultural lives of deaf people through creative arts.

An urgent concern of the Committee is the inclusion of all deaf people in the educational program, i.e., the deaf-mentally retarded, the deaf-blind, and the deaf-multiply handicapped. It is the general feeling that deafness is the primary handicap and that the secondary handicap must be attended to in respect to the deafness.

The Committee recommends that all State Education Agencies develop comprehensive state-wide plans for education of all deaf children and adults. Such plans should have input from local, state, and private agencies serving the deaf. Programs for the deaf should be complementary rather than duplicative or competitive.

No deaf person in the United States of America should be forgotten. The deaf adult is a tax paying citizen who contributes to society. He accomplishes this through taking advantage of the education offered to him and participating in the work ethic of this nation.

THE SLOW LEARNER AS AN INDIVIDUAL

Nita M. Minton, M.S., Deaf Multi-Handicapped Unit, California School for the Deaf, Riverside.

Introduction

Many of the ideas presented in this paper are not the original ideas of the writer, but were gained through workshops presented at the University of California at Riverside by associates of Dr. Robert Daw, President of the Institute for the Development of Human Resources in Palo Alto, California.

Fable of the Activity Curriculum, or the Differences in Individual Differences

(By Dr. G. H. Reavis)

Once upon a time, the animals decided they must do something to meet the problems of "the new world," so they organized a school. They adopted an activity curriculum consisting of running, climbing, swimming and flying, and, to make it easier to administer, all the animals took all subjects.

The duck was an excellent student in swimming, better in fact than the instructor, and made passing grades in flying, but he was very poor in running. Since he was slow in running, he had to stay after school and also drop swimming to practice running. This was kept up until his web feet were badly worn and he was only average in swimming. But average was acceptable in school, so nobody worried about that except the duck.

The rabbit started at the top of the class in running, but had a nervous breakdown because of so much makeup work in swimming.

The squirrel was excellent in climbing until he developed frustration in the flying class where his teacher made him start from the ground up, instead of from the treetop down. He also developed charlie horses from overexertion and then got C in climbing and D in running.

The eagle was a problem child and was disciplined severely. In climbing class he beat all others to the top of the tree, but insisted on using his own way to get there.

> At the end of the year, an abnormal eel that could swim exceedingly well, and also run, climb and fly a little had the highest average and was valedictorian. (Dunn and Dunn, 1972:7).

It becomes quite obvious in reading this fable that when we as educators write a curriculum and insist that all children learn all concepts and learn them equally well we are ignoring the individual differences among children.

A curriculum is important and necessary as a guide for structuring an instructional program, but built into the curriculum there should be flexibility to allow children to learn according to their own interests, abilities, and learning styles. The curriculum should be programmed to individual children.

Certainly there are skills that are important for all children to learn, but not to the same degree of proficiency or through the same methods, or within the same amount of time. In order to provide a maximum of successful learning experiences for a child, it is necessary for a teacher to observe and diagnose that child and then to prescribe an appropriate instructional program based on the observation and diagnosis.

This is true for teachers of all children, and especially so for teachers of children with learning difficulties. It is important to remember that the slow learner is an individual with potential and this potential must be developed as fully as possible.

The slow learner in many classrooms is continually faced with lack of success. If expected to compete with other children in the class, the slow learner consistently falls short. The less successful he is on one task the less desire he has to try the next one, thus he becomes even slower. This situation is tragic because it does not have to be this way. Many of the children that are classified as slow learners would not be so slow if they were provided with opportunities for success rather than failure. An effective individualized instructional program can provide successful learning experiences for a child and then lead the child to build on his successes. This is done by: (1) assigning the child work on concepts geared to his own academic level, (2) letting him spend the amount of time he needs to master the concepts, (3) giving him responsibility for learning what is required and selecting the approaches he enjoys using, (4) reducing frustration and anxiety by considering only his achievement without comparison to others, and (5) developing tasks around his particular interests whenever possible. (Dunn and Dunn, 1972:81–85).

If you decide to individualize your classroom there are many things to be considered. First of all you must want to individualize. You need to be convinced that it will be the most beneficial program you can provide for your class. You also need to believe that your students are capable of developing self-direction. Then you must commit yourself to structuring a program in which each child in your class will begin to learn self-direction.

The first step in individualizing is to decide how much of your program to individualize. Depending upon your classroom situation you may want to individualize only a few subject areas or you may want a totally individualized program. Use your judgment as to what will best meet the needs of your students and what will be the most comfortable for you. Setting up an individualized program involves considerable time and preparation, so it is important to be careful to start out with a program that is practical for you and your situation.

The next step is to determine a course of study. First decide on academic areas to be covered. This should be based on the needs and interests of the students. Then develop pre-tests to evaluate the children in each academic area in order to learn the strengths and weaknesses of each child. Using the results of your evaluations develop a "prescription" for each child in which you define in behavioral terms what the child is to learn in each academic area. In developing a child's "prescription" be aware of the child's strengths and interests and build on these. This is necessary if you want your program to be personalized as well as individualized.

Once the behavioral objectives and sub-objectives have been determined for each child it is necessary to provide appropriate learning materials. Ideally you should have a choice of tasks developed for each sub-objective so that the child can select the approach he prefers as he works toward achieving his objectives. These tasks should provide repetition through a variety of approaches, and the approaches should complement various learning styles.

In order to know at all times what the children are doing and what they should be doing, it is important to develop a useful record keeping system. You should have a file on each child in which you show the results of his pre-tests and list the behavioral objectives that you have prescribed for him. Provide a means of indicating which objectives he is currently working on and which objectives he has achieved.

To implement the individualized program you need to structure your room to accommodate the academic areas and any additional areas, such as interest or play areas, that you might want to include. You also need to plan a time schedule to organize the daily routine.

It is important to establish rules to be followed in the classroom. If you plan to use any formal system of behavior modification then you also need to decide on a suitable checkcard and appropriate rewards. Whether you choose to use formal behavior modification or not, there should be certain expectations for behavior and good behavior should be positively reinforced.

After the necessary planning and preparation have been completed you are ready to introduce the individualized program to the students. The children's attitude toward the program will be greatly influenced by your attitude. Through your enthusiasm make them feel that this is a new, exciting fun way to learn and that you have confidence in their ability to be self-directed.

The children need to understand the new classroom setup and procedures, so, before you actually start them in the program, carefully explain to them what is involved. Show them each area and describe the subjects to be studied. Demonstrate the use of materials that are not familiar and teach them how to use necessary audio-visual equipment. Discuss with them the rules of the classroom along with the rewards for appropriate behavior and the consequences of inappropriate behavior. Be sure the children understand the operation of the program.

I would now like to describe a project in which I was recently involved. During the last six weeks of this past school year my team teacher, Marcia Daly, and I set up a totally individualized instructional program in our classroom.

In planning our program we decided to use learning stations. Dunn and Dunn define learning stations as "small areas or tables that house specific rated materials and resources related to given curriculum such as mathematics, language arts, science or social studies at a particular level." (Dunn and Dunn, 1972: 68–69.) Since we had nine children in the class we decided to set up seven learning stations and two play stations. The stations were numbered and named as follows:

1. Reading
2. Writing and Perception
3. Play (arts and crafts)
4. Thinking Skills
5. Language (writing sentences)
6. Vocabulary
7. Math
8. Play (viewing slides and movies)
9. Language Skills (working on specific skills such as verb forms, prepositions, etc.)

After deciding on the academic areas to be covered, we divided the responsibilities. My team teacher was in charge of three learning stations and one play station and I was in charge of four learning stations and one play station.

We each developed pre-tests in the academic areas for which we were responsible. From the pre-tests we devised a basic checklist of behavioral objectives, written on a continuum ranging from simple to more complex objectives, for each academic area. We made copies of the checklists for each child and then recorded the objectives which the child could perform well and objectives on which he needed further work. (See Fig. 1).

Next we took a second copy of the checklists and recorded the objectives which the child would work on during the week. This was used as a lesson plan. (See Fig. 2).

We arranged the classroom to accommodate the nine stations. (See Fig. 3).

At each station we had a box in which we placed work packets for each child. We scheduled the day to allow twenty minutes for each of the nine periods and additional time for Physical Education and for a group activity. (See Fig. 4).

The children rotated from station to station. At each station they were responsible for getting out their own work packet and completing the assignment. If they completed their assignment before the twenty minute period was finished they were free to select more work or to read books. We did not assign additional work because we felt that this would discourage them from completing their work quickly.

We used a behavior modification system in our classroom in which we gave the children checks for appropriate behavior and work habits during each work period and activity. At the end of each twenty minute period we checked their checkcards. (See Fig. 5.)

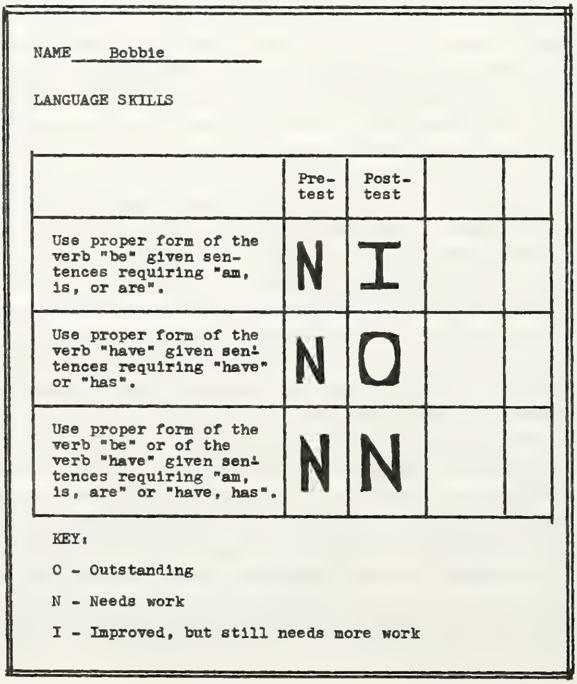
At the end of the day those children who had missed no more than three checks could put their checkcards on a wall display. When they had seven good checkcards on the wall they could go to the staff lounge and buy candy or cookies or potato chips from the snackbox.

My team teacher and I were pleased with the individualized program. The children adjusted quickly to the new routine and to the additional responsibilities placed on them. Although there were times that some of the children worked very little or completely refused to work, generally the children were all involved in working at their assignments. This provided an opportunity for us to work with the children individually at any time they had specific problems.

In the beginning the children were constantly asking for attention or assistance, but after a few weeks they began to complete tasks without demanding attention. The children told us that they liked the individualized program and it is my opinion that in those few weeks they did become more independent and more self-directed.

Although the children actually spent only about four weeks working in the program, in comparing their pre-tests with their post-tests, we found that each of the children improved in each of the academic areas. This learning was accomplished by the children working independently within the structure established by the teachers.

As a result of my experience using individualized instruction with slow learners I am convinced that, for the majority of children, this is the most efficient means of providing a truly relevant instructional program. This type of program requires a tremendous amount of planning and preparation that demands considerable time and work, especially in the beginning. In my opinion, however, the results make the effort worthwhile. Once the program has been established and materials have been developed and the children have adjusted to their responsibilities the program begins to run quite smoothly. At that point the teacher can step back and observe a classroom busy with individuals involved in meaningful learning experiences.



NAME Bobbie

LANGUAGE SKILLS

	Pre-test	Post-test		
Use proper form of the verb "be" given sentences requiring "am, is, or are".	N	I		
Use proper form of the verb "have" given sentences requiring "have" or "has".	N	O		
Use proper form of the verb "be" or of the verb "have" given sentences requiring "am, is, are" or "have, has".	N	N		

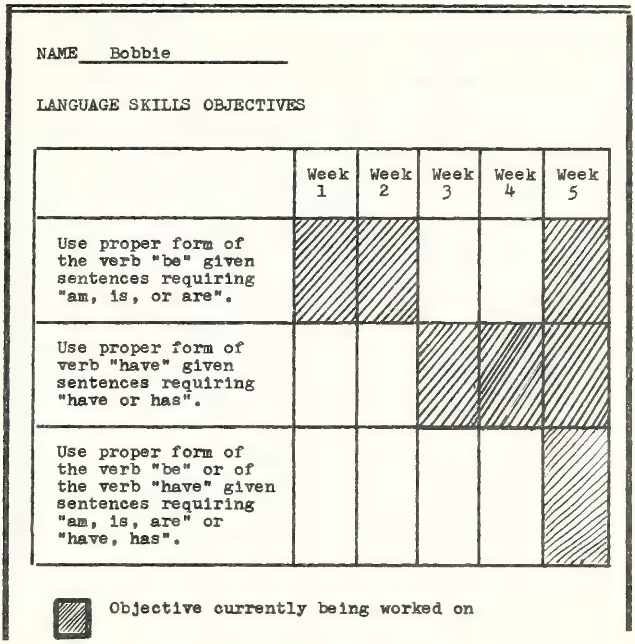
KEY:

O - Outstanding

N - Needs work

I - Improved, but still needs more work

FIGURE 1.—Sample of academic checklist.



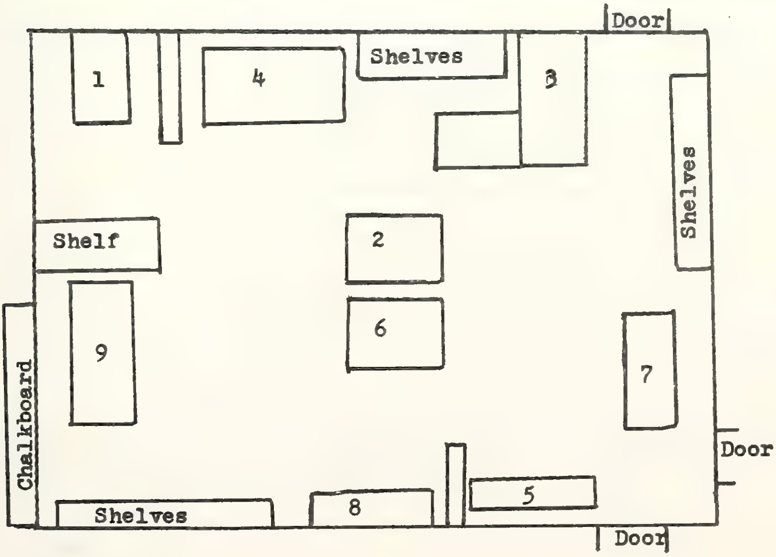
NAME Bobbie

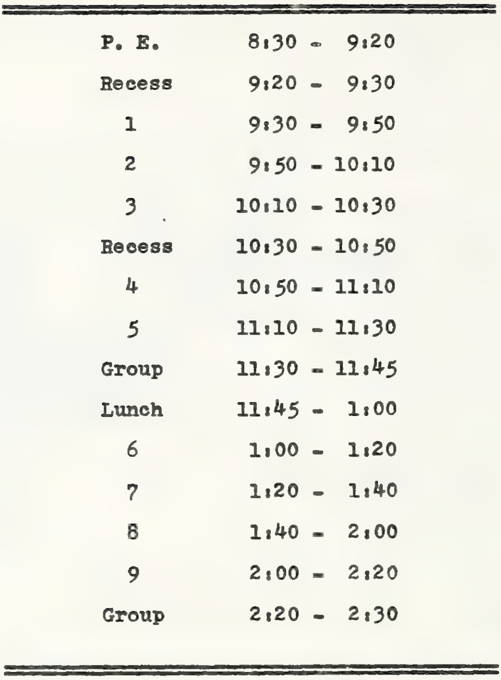
LANGUAGE SKILLS OBJECTIVES

	Week 1	Week 2	Week 3	Week 4	Week 5
Use proper form of the verb "be" given sentences requiring "am, is, or are".	▨	▨			▨
Use proper form of verb "have" given sentences requiring "have or has".			▨	▨	▨
Use proper form of the verb "be" or of the verb "have" given sentences requiring "am, is, are" or "have, has".					▨

▨ Objective currently being worked on

FIGURE 2.—Sample lesson plan.





P. E.	8:30 - 9:20
Recess	9:20 - 9:30
1	9:30 - 9:50
2	9:50 - 10:10
3	10:10 - 10:30
Recess	10:30 - 10:50
4	10:50 - 11:10
5	11:10 - 11:30
Group	11:30 - 11:45
Lunch	11:45 - 1:00
6	1:00 - 1:20
7	1:20 - 1:40
8	1:40 - 2:00
9	2:00 - 2:20
Group	2:20 - 2:30

FIGURE 4.—Daily schedule.

		WORK						BEHAVIOR						
		Begins work immediately	Works consistently	Completes work	Works neatly	Pays attention	Cleans up work area	Comes to area and sits down	Stays in seat	Accepts work	Cooperates with teacher	Doesn't bother other children	Works quietly	Keeps own area (box) neat
	work period													
	work period													
	work period													
	work period													
	work period													
	work period													
	work period													
	work period													
	work period													

ACTIVITIES

Lines up nicely	Walks or sits appropriately	Doesn't bother other children	Stays within assigned area	Follows instructions immediately	Is quiet	Cooperates with teacher

NAME:

FIGURE 5.—Sample checkcard.

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STRATEGIES FOR TEACHING 3- TO 4-YEAR-OLD HEARING-IMPAIRED CHILDREN

Jean Moog, Central Institute for the Deaf, St. Louis, Mo.

At Central Institute for the Deaf we attempt to fit our teaching procedures to the specific needs of each individual child. A description of the teaching procedures used with two of the children in our classes can serve to illustrate some of the different strategies we use.

KIM

Kim is a 3 year, 10 month old, profoundly hearing impaired child, with a little above average intelligence. Last September, when Kim was 3 years, 2 months old, she began attending a class for hearing impaired children two mornings a week. At that time Kim's teacher described her as follows:

Receptive language

Kim is a good situation reader but so far has given no evidence of understanding words. When Kim looks at the face and the lips of the speaker, she does not seem to be looking for meaning. She behaves as though she thinks that the teacher speaking is a signal to do whatever the situation calls for. She does not seem *to be aware that the words themselves have meaning.*

Expressive language

Kim is very shy and rarely attempts to communicate in any way at all. She seems interested in watching the other children but makes no attempt to interact or communicate with them. When a situation arises in which she needs adult help or wants something, she simply waits until the adult notices her and gives her what she wants.

Response to teaching

When a task is presented to Kim, she either looks "blank", becomes interested in something irrelevant, or begins to well up with tears. She has to be manipulated through even the simplest activities and seems to be afraid to even try to do what is expected. Once Kim has been manipulated through a particular procedure and knows what is expected, she is willing to cooperate and try it herself. Perhaps as Kim experiences success with her attempts, she will be more willing to try more often.

Observations of Kim in the classroom had indicated that she was not able to comprehend speech and she was not able to use speech for communicating. Although she had been exposed to language in the environment, she had not "picked up" that language. Therefore, some of the language work for Kim consisted of highly structured, drill-like procedures. Once Kim was able to comprehend some words and to imitate some words, the teacher contrived situations that required Kim to communicate. Then the teacher provided words for Kim's communication attempts. The specific objectives established by Kim's teacher were as follows:

1. Teach some specific comprehension of words.
2. Get Kim to communicate expressively in some way.
3. Get Kim to communicate with words.

In order to teach Kim to pay attention to the words instead of relying totally on the situation, the teacher worked with Kim in a highly structured, one-to-one setting. The following steps were involved:

A. The first step was to get Kim to consistently watch the teacher's lips and to listen.

B. Next Kim was expected to differentiate between two different verbal commands.

C. Then she was taught to identify a variety of objects and pictures when the teacher said the names.

D. Once Kim could identify 20–30 pictures, the teacher worked toward getting Kim to add to her vocabulary at home and in the classroom, rather than only in the structured setting.

Response to teaching

By May, Kim demonstrated knowledge of well over 50 words and phrases and could comprehend them outside of the structured setting described.

In order to encourage Kim to actively communicate with the teacher, the following techniques were used:

A. Even when the teacher knew what Kim wanted or needed, she did not satisfy that need until Kim had communicated in some way.

B. Often the teacher offered Kim a choice between two items and then required Kim to communicate which one she wanted.

Response to teaching

By January, Kim was in the habit of communicating for what she wanted.

Once Kim was communicating, the teacher began teaching her to communicate with words.

A. First, whenever Kim communicated something to the teacher, the teacher provided some appropriate words for that communication.

B. When the teacher attempted to communicate with Kim, the teacher did everything possible to make the words she said meaningful to Kim.

Response to teaching

By April, Kim willingly attempted to imitate the words that expressed what she was communicating. By the end of May, Kim had begun to "ask for" the appropriate words for what she wanted to say and she was trying to understand what was said to her.

LAURA

Laura is a severely hearing impaired child, who was 3 years, 7 months when she began attending a class for hearing impaired children two mornings a week. At that time Laura's teacher described her as follows:

Receptive language

Laura makes good use of situation cues to supplement her comprehension of speech. She can comprehend simple phrases and sentences but seems to rely on one word of whatever is said to her and responds to that word in combination with whatever other cues the environment presents. She has no understanding of questions and seems to be unaware when a question has been asked.

Expressive language

Laura sometimes talks in 2–3 word telegraphic phrases but still uses one word utterances a great deal. Much of her spontaneous language consists of naming things.

Response to teaching

Laura willingly participates in all activities presented in the language lessons and in the classroom. She accepts correction and attempts whatever is asked of her. She enjoys adult approval but is not overly dependent on constant praise.

Observation in the classroom indicated that Laura had acquired a great deal of language without specific teaching. Therefore, real world situations continued to be used for a great deal of Laura's language teaching. However, for Laura, too, systematic practice was found to be an effective and efficient way to teach new language and to improve speech production. Based on these observations, Laura's teacher established the following objectives for her:

1. Increase the structural complexity of Laura's language.
2. Expand Laura's language concepts to include adjectives, adverbs, prepositions, longer more complex utterances.
3. Teach Laura to ask and answer questions.

Following are some of the techniques used with Laura to reach the above objectives:

A. Laura was provided with good language models and a wide variety of language stimulating activities.

B. There was systematic planning for the newly presented language to occur frequently and naturally in contrived situations throughout the morning's activities.

C. More structured and systematic practice was provided by writing sentences on cards and practicing them in a structured setting.

Response to teaching

By March, Laura understood simple conversation about familiar objects, people and events. She was able to follow simple stories. By the end of May, Laura was able to respond appropriately to some questions in the classroom setting. By the end of May, Laura spoke mostly in two to four word telegraphic phrases containing nouns, verbs, adjectives, adverbs and prepositions. She was also asking questions.

CONCLUSION

The basic strategies for the two children described was different because the teacher had observed differences in their language abilities. The choice of the approaches to be used with each of these children was based on the teacher's observations of the child. Kim required a highly structured, distraction free environment to learn the first and very basic skills of communicating with words. Laura had already demonstrated that she could learn from a much less structured approach. She already had a good grasp of the basic skills of communicating with words. Therefore, the strategy involved helping her to get the maximum benefit from the language in her environment as well as to help her to add to and refine her present use of verbal language.

BEHAVIOR MODIFICATION TECHNIQUES AS UTILIZED AT THE KANSAS STATE SCHOOL FOR THE DEAF

Patty Moylan, M.S., Kansas State School for the Deaf, Olathe

As classroom teachers we daily face the problems of behavior management. We also have confronted these problems in our own experiences at the Kansas School for the Deaf. After several years of sometimes ineffective, frustrating attempts to change behaviors, often through negative reinforcement, we found the need for other techniques. The best solution that we found is a systematic positive reinforcement, sometimes called operant conditioning.

For those who have not had a course in behavior modification techniques we feel that it is important for the classroom teacher to know the basic principles of the procedure. Our knowledge of these techniques was gained through a course taught at the Kansas University Medical Center by Dr. Vance Hall, an outstanding authority in the field.

We will now present some of these basic principles.

First of all the teacher must define a behavior that must be both observable and measurable. Basically there are two types of behavior: respondent behavior which is simply an involuntary, reflex action and operant behavior which is voluntary action. (example)

In modifying behavior, the first step is to obtain a record of its operant level. This is called the baseline. A baseline, therefore, is a pre-experimental record of a behavior. The most efficient and effective way to represent a baseline is with a graph. (example)

In order to make sure the recording of a behavior is reliable, an independent observer should be brought in to make a simultaneous recording. (example)

In recent research we see two basic designs. Both are useful and can be applied to either single subjects or single groups. These designs are called reversal and multiple baseline scientific verification procedures. In our experience with young children we have found the reversal design easier to implement. Therefore we will present only this design.

The following steps are used in employing a reversal design to investigate the effects of a given condition on a specific behavior:

THE REVERSAL DESIGN

1. Baseline$_1$—Scientifically define and record the operant level of the behavior prior to the institution of experimental conditions.
2. Experimental Condition$_1$—Begin experimental procedures while continuing to record the strength of the behavior.
3. Baseline$_2$—Withdraw experimental procedures (return to Baseline conditions) and continue to measure the behavior.[1]
4. Experimental Condition$_2$—Reinstate the experimental procedures (return to Experimental Condition$_1$).
5. Post Check—Periodically measure the behavior beyond the formal end of the experiment to see if behavior levels are being maintained.

Operant behavior is controlled by the consequences which *immediately* follow it. (example) These consequences which increase the strength of a behavior are called reinforcers. (example) Often the success of changing behavior depends on whether the consequence is really reinforcing to the child. (example)

Now we would like to discuss types of reinforcers. There are two types of reinforcers: primary and secondary. Primary reinforcers are those which satisfy certain biological needs such as food, drink, warmth, etc. Most reinforcers readily available to teachers are of the secondary kind; i.e., those not directly related to biological needs such as attention, praise, tokens, etc.

Two schedules of reinforcement a teacher may use are continuous and intermittent. Continuous is the schedule to establish a behavior and intermittent scheduling will maintain the behavior. (example)

We have found token systems of reinforcement to be very effective in our classrooms. Some of the advantages of using tokens are listed below:

1. Tokens do not depend upon any one depriving condition since they can be backed up by many reinforcers.
2. Tokens are tangible.
3. Tokens can be given immediately following the desired behavior, even though the back-up reinforcer may be given at a later time.
4. Tokens are delivered during or immediately after appropriate responses, therefore they help both the teacher and student to discriminate appropriate behavior.
5. Tokens allow the reinforcement to be broken into small segments.
6. Tokens require provisions for back-ups, thus insuring that reinforcers are available to children.
7. Tokens encourage children, teachers, and parents to participate in setting goals.
8. Tokens help teachers clearly define the behavioral goals to be achieved by the use of tokens.

For example here are two studies carried out in our classrooms:

Reduction of Nose Picking Behavior Through Token Reinforcement by Patty Moylan.

Reduction of Standing Up Behavior Through Token Reinforcement by Martha Tims.

REDUCTION OF NOSE-PICKING BEHAVIOR THROUGH TOKEN REINFORCEMENT

(Patty Moylan, Teacher, Kansas State School for the Deaf—Preparatory I—Shawnee Mission, Kans.)

INTRODUCTION

Society dictates that some behaviors are acceptable and others are not. Young children often develop habits that are not readily acceptable to social groups—nose-picking behavior being one of such habits. Failure to correct these habits often results because procedures are not consistent or reinforcement is not immediate.

Token systems have been frequently utilized to develop and maintain appropriate or useful behavior (e.g., Weimer and Freeman, 1971; Hall, 1969; Broden, Hall, Dunlap, and Clark, 1970; and Wolf, Giles, and Hall, 1967). Token reinforcers are often used in special education classes and with others who do not respond to praise, teacher attention, and other common reinforcers (e.g., Hall, 1969; Montgomery, 1971). Such pupils will readily work for coveted goals; however, candy, stickers, or any other token must not be given randomly but under a systematic application of consequences. When token reinforcers are paired with praise or pride in accomplishment, they can sometimes be withdrawn and the natural reinforcers will maintain the desired behavior (e.g., Lamb, Harris, and Copeland, 1971).

The purpose of this study was to reduce the nose-picking behavior of a seven-year-old hearing impaired boy by the use of systematic reinforcement through a token system. It was conducted by a student enrolled in a behavior management course in fulfillment of a partial requirement for the class; the student was also the subject's classroom teacher, concerned with the elimination of a socially unacceptable habit.

SUBJECT AND SETTING

The subject was a seven-year-old profoundly deaf boy enrolled at the Kansas State School for the Deaf in Olathe, Kansas. He is the only child of normal hearing parents who stated they had often tried to break their son of this habit without any permanent success. The subject evidenced other nervous habits such as rapid eye-blinking and other gross body movements.

Experimentation was carried out in a self-contained class of seven hearing impaired pupils, academically functioning on a Preparatory I level. The subject had three years of pre-school education prior to enrollment at the Kansas School for the Deaf. The pupils were generally seated on chairs in a semi-circular arrangement facing the teacher. The classroom was large, sufficiently lighted, and in general a pleasant atmosphere. The pupils experienced close contact and interaction with the teacher and each other.

MEASUREMENT PROCEDURES

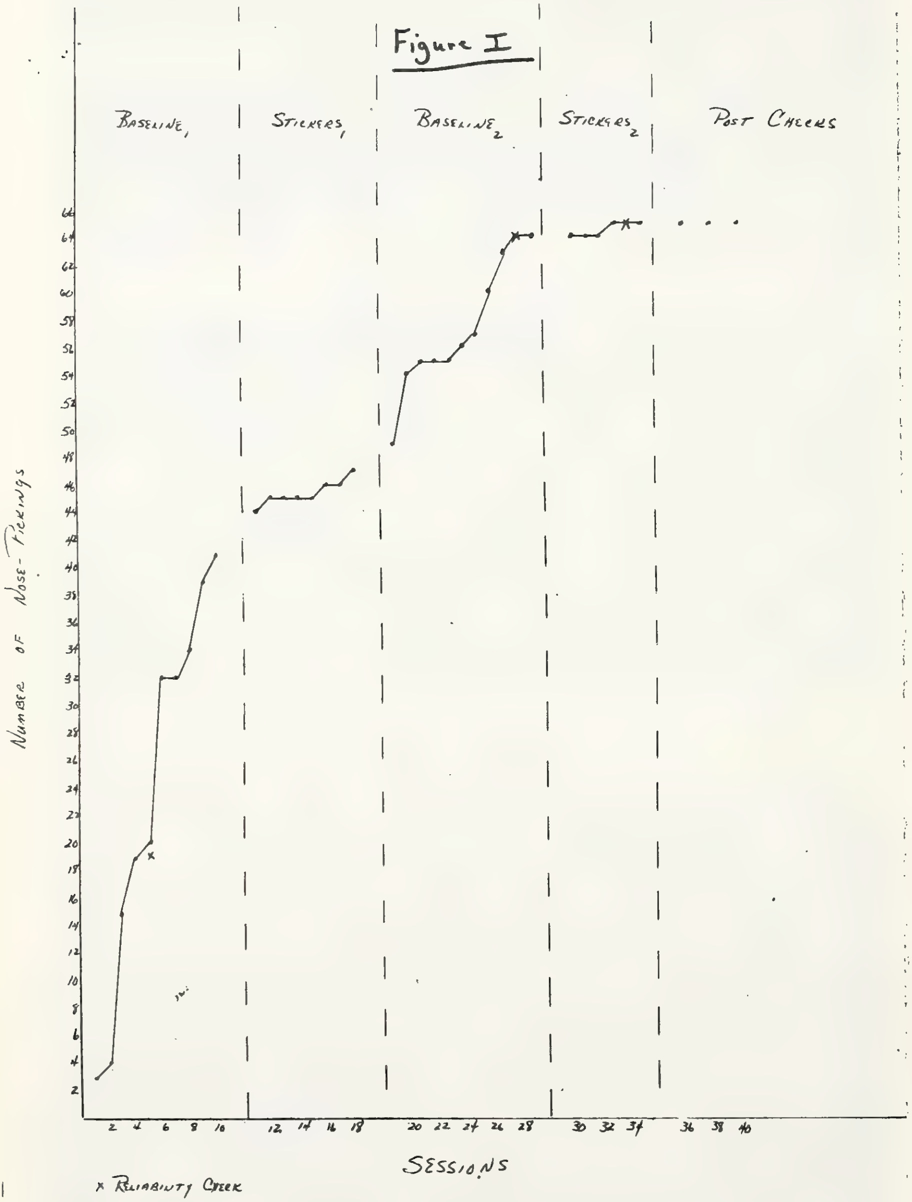
In finding an operant level of behavior the following definition was used for all recording: "Nose-picking is defined as inserting any finger or thumb into either or both nostrils."

One hour daily observation sessions were made by the classroom teacher while a graduate student teacher conducted the class. Since the pupils were used to the classroom teacher moving around the room, without giving her notice, observation could be made from any vantage point. Recordings of behavior were calculated on a grocery counter by the experimenter; persons making reliability checks used a paper and pencil tally.

A reliability check was taken during the third session by the supervising teacher of the primary department of the school. A teacher-aide made checks during the fifth and twenty-eighth sessions. A graduate student made a final reliability check during the thirty-fourth session.

Reliability checks ranged from 50% to 100% with a mean of 87.5%. The results were computed by dividing the record of the observer with the lower figure by the record of the observer with the higher figure. (See Figure 1.)

FIGURE 1



EXPERIMENTAL PROCEDURES AND RESULTS

Baseline 1

A baseline of the operant level of behavior was obtained through the first ten sessions; the baseline remained quite stable. One hour observations were made daily during a "news" activity, language, speech, and auditory training classes. The subject was, therefore, involved in group activities for the most part. The mean number of nose-pickings during this phase was 4.1 per session. (See Figure 1.)

Token reinforcement (stickers) $_1$

Beginning the eleventh session, gummed stickers were given at fixed intervals (FI–10 min.), contingent on non-nose-picking behavior. Gummed stickers were chosen as reinforcers since they had proved to be highly valued by the subject in other situations. The teacher would say, "I heard the bell," while showing the subject a minute timer. "You were a good boy; you weren't picking your nose." Then a gummed sticker was placed on a 4½″ x 6″ piece of brightly colored construction paper labeled with the subject's name and displayed in the classroom. There was a continuous posting throughout the Experimental $_1$ procedure.

Experimental $_1$ phase was carried out for eight sessions during which time the mean number of nose-pickings decreased to .75 per session. (See Figure 1.)

Baseline $_2$

Beginning the nineteenth session the experimenter no longer reinforced the subject for non-nose-picking behavior, but ignored the nose-picking behavior. This phase was carried out for eleven sessions during which time the mean number of nose-pickings was 1.6 per session. During this phase the subject often caught himself starting to pick his nose and withdrew his fingers from his nose. The reversal demonstrated the causality of the procedure used. (See Figure 1.)

Token reinforcement (stickers) $_2$

With the thirtieth session reinforcement was reinitiated under the same experimental conditions as before. The subject's nose-picking behavior decreased to low rates and was maintained throughout this period of six sessions. The mean rate of behavior at this time was .17 per session. (See Figure 1.)

Post checks

Post checks were made by the experimenter during the thirty-sixth, thirty-eight, and fortieth sessions. Nose-picking behavior was not emitted at all during these observations. (See Figure 1.)

Token reinforcement was dropped after the thirty-fifth session and teacher praise was the only consequence used for non-nose-picking behavior. This has proven to be a strong enough reinforcer for the subject at this point.

DISCUSSION

The results of this study indicate that token reinforcement has been effective in the reduction of a socially unacceptable habit, nose-picking behavior. Prior to baseline both parents and teacher had tried to decrease the behavior through negative verbalizations without success. When experimental procedures were initiated the subject seemed extremely interested in and proud of receiving stickers for non-nose-picking behavior.

Since the other pupils were upset over not receiving reinforcement, beginning in session twelve they each received one sticker for every three the subject received. In session eleven, two other pupils started picking their noses. This behavior was eliminated once they were also reinforced. When Experimental$_2$ phase was initiated the other pupils were no longer reinforced with no averse effects.

The subject's mother reported that her son communicated to her what was happening in school concerning his nose-picking behavior. She has noticed a definite decrease in this behavior at home. It was interesting to note that when the subject had a cold his mother tried to get him to use a kleenex, but he refused to touch his nose. He has learned since, however, that it is acceptable to use a tissue for such purposes.

As a result of this study the subject has reached a level of behavior that is socially acceptable. Thus nose-picking behavior can be extinguished or reduced to low rates through systematic reinforcement. This very simple study can be easily replicated by other teachers or parents and it is hoped it will benefit others.

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THE NORTHRIDGE PLAN FOR POST-SECONDARY EDUCATION

Harry J. Murphy, Ed.D., assistant director, Center on Deafness, California State University, Northridge

Campus Services for the Deaf is a sub-unit of the Center on Deafness at California State University, Northridge (CSUN). This unit is responsible for providing support services to deaf students. These support services are interpreting, notetaking, counseling, and tutoring.

The overriding philosophy is one of integration. A more contemporary term seems to be "mainstreaming," or attempting to involve the handicapped in the mainstream of life. A more detailed explanation of this can be found in an article which I co-authored with Dr. Ray L. Jones and which appeared in the December, 1972, *American Annals of the Deaf*.

During the spring semester of this year, about 120 deaf students were enrolled. These included undergraduate students, graduate students in teacher training and in leadership training, and a few graduate students pursuing academic (as opposed to education) majors. The number of 120 is divided equally between those with graduate and undergraduate status.

We are a major teacher training university and most of our deaf students seek educational and/or leadership training at the graduate level. Education is not offered as an undergraduate major in California; consequently all of our undergraduates pursue academic majors.

The criteria for admission into the university is the same for a deaf student as for a hearing student. This consists of determination by the university admissions office of an "eligibility index," i.e., a numerical factor computed by multiplying high school grade point averages by Scholastic Aptitude Test scores. Where students are declared "ineligible" by the university admissions office, the Center on Deafness may accept a deaf student by "Special Exception" after a separate Admissions Committee meeting to determine if the facts warrant such a decision. Ninety percent of the students meet the usual admissions criteria of the university.

Incoming undergraduate students undergo an orientation to the university and the local community. During orientation, students undergo testing in a number of academic areas and also receive some remedial work in language and math, as needed.

We are a "commuter college" and more students, deaf and hearing, live in off-campus apartments than in a dorm. Counselors recommend a dorm experience for most lower division students. Upper division students tend to want to "go it alone." The ultimate decision, in any case, is made by the student.

Concerning our undergraduate students, about one-third come from residential schools, one-third from day schools and classes for the deaf, and one-third from regular high schools. The grade point averages (GPA's) of deaf undergraduate and graduate students compare favorably to the GPA's of hearing undergraduate and graduate students.

Ninety-five percent of our interpreters are themselves students at the university. About half of them have deaf relatives. The other half have become interested in deafness through social and/or academic contacts with deaf students on campus. Many from this group express their interest first through volunteer notetaking, then through notetaking at a nominal salary. They concurrently take sign language and then interpreting classes for college credit. Their first interpreting assignment is usually less demanding than an academic lecture type of course. Usually it is a class (such as art) where demonstration and lecture are alternated. As students grow in experience, their interpreting assignments become more demanding.

In addition to sign language and interpreting classes, special interpreting workshops are also held to give our people further specialized training. These workshops may be in interpreting in the educational, legal, or religious setting, as well as in "public signing."

Interpreters are routinely evaluated, on the job, by senior interpreters. Recommendations for improvement are positively presented and are made on an individual basis.

Based upon an observation by an evaluator, a recommendation may be that the evaluatee observe in a class where there is a more experienced interpreter, or to attend a short-term workshop concerning some aspect of interpreting, or to attend regular in-service sessions conducted regularly by the head of interpreting services.

The concepts of evaluation and in-service training are considered to be two elements in a single process. If evaluation points to areas in need of improvement, we strongly feel that we have an obligation to provide training in those areas to insure that improvement occurs.

Most of the interpreters welcome practice in reverse interpreting and frequent sessions are held to improve skills here. Most interpreters need to improve their skills in fingerspelling. Again, frequent sessions are held to provide fingerspelling practice. Videotape replays seem to be an effective technique in in-service sessions.

One method of recruiting interpreters is to offer an unconditional $300 stipend to incoming freshmen or transfer students who already have excellent manual communication skills. The money for interpreter stipends is raised among local service groups and similar organizations. The deaf students themselves raised funds through a banquet. Held for the first time in 1973, it is expected that it will become an annual event.

Two counselors serve the program. They deal primarily with undergraduate students as graduate students tend to receive counseling from the staffs of the teacher preparation program and the leadership training program.

The counselors are trained in the area of counseling and hold MA degrees from accredited institutions. They deal with students in academic, vocational, and personal/social areas.

From our experience, we see that qualified deaf students may successfully complete their education with appropriate support services. The program continues to expand and from the growing number of inquiries we receive, we predict that the enrollment should reach about 200 within the next two years. We feel that this number is the optimum number of students that we could serve within the program described.

A PROTOTYPE TRAINING PROGRAM FOR PROFESSIONAL AFTERCLASS STAFF IN RESIDENTIAL SCHOOLS FOR DEAF CHILDREN

Doris W. Naiman, Ph.D., Deafness Research & Training Center,
New York University, N.Y.

I think all of us who work with deaf children would agree that it is a difficult job to help deaf children develop to their full potential educationally and emotionally. It is rewarding and challenging, but it is not easy. And if a child is going to grow in communication, language, knowledge and emotional maturity, the people around him need to provide a 24-hour-a-day learning environment—not structured, not formal, but still full of opportunities to learn and grow and develop.

Parents must do this in the afterclass hours for children who live at home. And it is almost always true that if a deaf child does develop to a high level of intellectual and emotional maturity, there are parents who have put a great deal of thoughtful and knowledgeable effort and time into providing broad opportunities for learning and growth. And the same is true for children who live in residential schools. Those who are responsible for their afterclass hours, most especially the dormitory counselors, need to provide this kind of environment.

What kind of staff development program can help a residential staff do this?

It needs to be a comprehensive program that involves the whole school. It needs to be an ongoing program that makes afterclass life an integral part of the school. Staff development and inservice training need to be planned and implemented in a way that involves the entire school including administrative and inclass teaching staff.

I would like to tell you about an approach to staff development in residential schools that the New York University Deafness Center has developed in a pilot project with six schools in the northeast region. The idea was to develop in each school a cadre of trainers who could then be responsible for planning and implementing a comprehensive program of inservice training in its own school. From each school the cadre of trainers was composed of three people from both the inclass and afterclass supervisory staff. All of the participants attended five training institutes of two or three days each which were held at the participating schools.

The goals for each cadre of trainers were:

to establish task oriented working cooperation among inschool and afterschool hours staff;

to plan and implement an inservice training and staff development program for its own school;

to increase the knowledge and skills needed to implement training programs in each school. Content areas of the seminars include supervisory principles and skills; group dynamics and processes; management of specific behavior problems; use of special educational techniques, aids, and training strategies; exploitation and use of local resources in staff training.

The trainers then had these goals for the dormitory counselors:

to increase satisfaction in job and feeling of worth as having an important role in the total school program;

to improve ability to communicate with deaf children;

to increase knowledge of child development and behavior and the needs of children and adolescents;

to increase knowledge of the educational process for deaf children, especially in regard to development of language and communication;

to provide more opportunities for children to develop and use language and communication;

to provide a broader experiental base for the children—a greater variety of learning experiences;

to increase skills in dealing with specific behavioral problems;

to increase knowledge of group dynamics and skills in group work;

to help children to develop interpersonal skills;

to provide children with increased opportunities for decision making choices with consequences.

The Deafness Center is now preparing a complete package containing a handbook for staff development, a book of readings, and a variety of video tapes, slide-audio sets, and films. These will be made available to all residential schools for deaf children.

Ken Litchfield, Principal of New York School for the Deaf, who participated in the pilot program, will share with you some of his perceptions and reactions. We will then show you some of the video tapes that have been developed for use in staff development programs in individual schools.

MEDIA HORIZONS

Malcolm J. Norwood, chief, Media Services and Captioned Films, Bureau of Education for the Handicapped, U.S. Office of Education, Washington, D.C.

The life style of modern society is technologically oriented. Consequently, the mention of technology immediately conjures mental pictures of industry and the influence technological advances have had on our personal lives—labor saving devices, computers, mass printing, automobiles, jet planes, rockets to the moon, telephones, motion pictures, television, and so forth. Technology is rarely considered by the layman, or even the classroom teacher, as having a major role in the educative process. Yet nothing could be further from the truth.

In fact the invention of movable type five centuries ago which permitted duplication of writings in printed form was the first major technological contribution made to the educative process. It made possible the greatest forward step in education the world has ever yet known. Interestingly enough, this invention could be considered as a parallel to the modern teaching machine by stating each student in being provided with an individual book would be free to learn on his own. Who needs a teacher? The printed book would permanently replace the instructor. Each student would progress at his own rate. Of course, the opposite was true and the teacher became more important than ever before. Even in its pre-industrial state, technology has always played a role in the learning-teaching process, be it the wax tablet of ancient times or the more recent quill pen. The abacus, man's earliest computer, was known in the Mediterranean as early as 450 B.C.

Obviously, technology's major promise is the creation of change which will permit the educational system to manage learning so that it will occur more efficiently. Teachers, however, resist change either because they have not understood or because they do not want to accept alternatives to doing the talking, the performing and the showing. Slow as teachers are to accept innovation, the fact remains that over the past ten years classrooms for deaf children have changed greatly and most, if not all, are equipped with certain basic equipment such as the overhead projector, filmstrip projector, and screens. Interest and understanding has also developed to the point where teachers in many schools have access to substantial amounts of resource materials and they are beginning to use them more extensively and wisely to significantly reduce instructional time.

This endeavor to bring machines, materials and techniques together to improve educational opportunities for deaf children has resulted in the development of a national distribution system of films and other relevant materials; the development of instructional systems such as Project Life; a series of annual symposiums on educational technology for educators of the deaf; the development of regional media centers; the establishment of a doctoral program in Educational Technology for educators of the deaf at a major university; and the realization that teacher training centers must begin to provide preservice training in the use of media. It has also resulted in greater emphasis on the need to transfer these applications to the education of all handicapped children. Consequently, the Captioned Films for the Deaf program (which was originally directed toward providing worthwhile recreation for deaf adults and children) has become, in fact, a national program of instructional technology directed toward bringing the best, the most relevant and the widest experiences possible to enhance the educational environment of handicapped learners.

The name of the game today is educational *services*. To date the Media Services and the Captioned Films Branch has been assigned the Federal government's responsibility of bringing the results of research in instructional technology directly to the handicapped child. For the future, what is being planned is the development of a Learning Resources System composed of component programs of the presently existing Special Education Instructional Materials Centers, Regional Media Centers for the Deaf, Regional Resource Centers and the National Center for Educational Media and Materials for the Handicapped. In cooperation with the States, this system is expected to provide a full spectrum of services including (1) identification of the handicapped child, (2) diagnosis, (3) program prescription, (4) development of needed instructional materials and (5) delivery of other appropriate support services to the learner. The purpose of this comprehensive system is to spread the responsibilities among components which vary in interest and expertise, but which interlock in such a way that this system can deliver the program as a whole. This approach is compatible with the 1980 objective of the Bureau of Education for the Handicapped: an appropriate education for all handicapped children. At the present time there is more theory than practice in the Learning Resource System, but it is rather obvious that through the converging of the various efforts now taking place a full complement of services can be completely developed into a single system with sufficient thrust and direction to serve the handicapped child. A pivotal or capstone role of the media components will be carried out by the National Center for Educational Media and Materials for the Handicapped. Dr. John Belland, Director of the Center, will present you with an overview of the center and its projected role.

The question running through many minds at this point is—what is the future of the Captioned Films for the Deaf program? Will services be diminished or curtailed? The answer is no. Part F of the Education of the Handicapped Act has two distinct parts. One which specifies the captioned films program and the other which concentrates on other educational media support for the education of the handicapped. It is the second part which makes the Learning Resources System possible without taking away the original intent of Public Law 85–905. Many of the benefits of instructional technology will be coming to the field from the Bureau's LRC system while the basic services of captioned films continue.

One of the most influential media is television. With the exception of some developments from within some schools for the deaf and the Southern Regional Media Center, little has been done to make effective use of television. In December, 1971, a national conference was convened in Knoxville which brought together representatives of the deaf community, the broadcasting industry, program producers, parents, Government and other interested resources. The purpose of this meeting was to seek ways and means of allowing the hearing impaired to obtain their rights to the invaluable educational, social and cultural benefits of broadcast television.

Since that time progress has been made in many areas. In many cities across the country stations have provided interpreters for news programs and emergency warnings. These actions for the most part might be considered token measures. MSCF has been working closely with Public Broadcasting Services to develop a viable captioning system to serve the needs of the hearing impaired.

Under a contractual agreement with WGBH–TV of Boston 26 programs of the French Chef starring Julia Childs have been completed. Master tapes of these programs are located at the Public Television Library in Bloomington, Indiana, and became available June 1, 1973, to any PBS station in the country. This program has been very popular and while not the equivalent of "Mission Impossible," it is a step in the right direction. A "mixed bag" of 26 additional programs are presently being captioned to add variety to available programming. The important point is that while these programs are available, we need to get them on the air to justify our efforts in this direction. The way to do it is for you, as members of the community, to make a request of your local PBS station to program them. Our variety in captioning is an attempt to penetrate the many facets of television: education, adult entertainment and children's programs. While we in Media Services and Captioned Films try to penetrate the many kinds of broadcast television, you must see that the markets are penetrated.

Another development is an agreement with WGBH in Boston to begin a demonstration project this coming fall which, in brief, will be the start of a captioned network newscast. In January, 1973, this captioning unit originated a nationally-broadcast captioned version of President Nixon's Inaugural Address seven hours after it was delivered. The feasibility and efficiency of this technique of speedily adapting important and timely information firmly established the possibility of providing hearing impaired persons with the type of programming most often requested: daily news. A 6 p.m. national newscast will be taped and captioned for rebroadcast at approximately 11 p.m. the same evening. The Eastern Educational Television Network has expressed a willingness to distribute this newscast to its affiliates so that each local station may broadcast the captioned news if it so desires. There is a possibility that Public Broadcasting Service will follow up by providing the program to its interested member stations. Again the need for community interest and action becomes most vital. This depends on you and your constituents.

A third area of great importance is a national demonstration test of the "closed captions" technique which depends upon the use of a special decoder. Captions are visibly only to the viewer who has this special decoder attached to his set. This is an outgrowth of a special system developed by the National Bureau of Standards for distributing time and frequency signals via television broadcast. A careful study by the National Association of Broadcasters indicated that closed captions were technically feasible but that certain steps need to be taken before such captioning could become a reality. Basically these are:

1. A caption decoder must be developed.
2. A single system must be developed.

3. Extensive field tests of the entire system including receivers equipped with decoders are necessary.

Among other questions to be answered are:

1. Cost effectiveness.
2. The length of time required to caption a program.
3. The cost of captioning a program.
4. The cost of the decoder.

Over the next year this system will be further refined and developed. Its potential promise for opening a new dimension for the hearing impaired is great. With patience and continued efforts we feel that broadcast television will eventually play its promised role in enriching lives of deaf persons.

Other future possibilities are the promises held by CATV which can be exploited to benefit not only the deaf, but all of the handicapped. One of the most outstanding characteristics of cable television is the large number of channels which can be provided by cable, these exceed by far the number of channels that can be made available through over-the-air broadcast. It makes possible special programming for very small numbers of people within a given community. CATV also makes it possible to "talk back" to a television set because all new cable systems must have the capacity to allow a subscriber to send digital signals to the originating facility of the cable operator where such signals can be fed into a computer or displayed on the screen. Known as interactional TV, this system permits individualized learning either at home or in a school for the deaf. The potential use of CATV for learning and cultural enrichment are enormous.

On the horizon, we can see the promise of television becoming a reality for the deaf. Its applications are many and varied. As we progress down this path we must not allow our unconscious devotion to the traditional patterns of teaching to divert us from new patterns of instruction made available by the electronic media.

In the years to come we fully expect our Bureau and Branch to continue our basic mission which has been to help deaf persons overcome their social and cultural isolation and to enhance their educational opportunities. Though this mission has been expanded to include all handicapped children, it does not mean a reduction in services. To the contrary, present developments should result in better services. Experience has shown that many materials created for use with the deaf child have had positive and rewarding pay-offs for other children. This street runs both ways. Instructional materials are developed around behavioral objectives to suit the needs of certain students and in the case of the handicapped there are positive spin-offs from these materials which were developed to honor specific learning pathways. If the sought for behavioral changes have occurred and with some redesigning certain materials can be reapplied to obtain desired results from others, all stand to gain. A single system enhances this possibility.

The early model set up by the Captioned Films for the Deaf program is growing into an expanded mature system. A comprehensive national system puts us on the threshold of what can be accomplished for education through technology. The real meaning of the original captioned films legislation is becoming more clear and the fulfillment of its promise will be achieved as we step across this threshold.

OBSERVATIONAL RESEARCH ON AN EDUCATIONAL PROGRAM

Carolyn Nygren, Central Institute for the Deaf, St. Louis, Mo.

There are several reasons why teachers are not happy with the thought of research being done in their classrooms. Teachers often do not know the research question that is being asked, and if they happen to read the results of the completed study, they may not see how the work can be helpful to them in their job of educating children. I would like to talk about the kind of research that depends heavily on the input of individual teachers and is designed to answer the kinds of questions for which both teachers and supervisors need to have answers. This paper is restricted to a discussion of observational research designed to give administrators enough information to answer educational questions about language learning. I will discuss the kinds of questions that have been considered in the research with the Early Education Project at CID, since these programs are the ones I know best. However, variations of the same questions typically are asked by any educational institution, and variations of the same methods probably are necessary to answer those questions.

One question that can be asked is, "How are we going to evaluate the progress of the people we are working with towards achieving the goals of our program?" The first step towards being able to show progress is to describe behavior in the areas program administrators consider to be important. Since one of the major goals of the Early Education Project is to help the young deaf child to learn language, one of the ways a research staff can be helpful to the project staff is to help them develop scales of language development and determine the appropriateness of these scales to the children in the program. This is especially important since most of the language scales designed for the hearing child are not appropriate, either because the levels assumed for the hearing child are not reached in the same sequence or not reached at all by the deaf child, or the levels are not sufficiently differentiated to describe the progress of the deaf child efficiently. Since the language a deaf child learns first is largely that which is specifically taught to him, the levels decided upon by a staff to reflect development are usually determined by the curriculum of their institution and may not be applicable to another institution.

A teacher depends a lot on intuition in determining when a child is ready for certain kinds of language experiences. Often it is difficult to verbalize exactly what behaviors of the child lead a teacher to say a child is at a certain level. A research person may be able to find a way to tap those intuitions and develop scales that reflect the teachers' knowledge about the language development of deaf children. Ann Geers of our research staff is the person responsible for developing scales of expressive, receptive, and imitative language. She depended on the teachers, especially Jean Moog, for her information. In an institution without a research staff, a teacher should be able to do the same job. Ideally the person asking for information should be familiar with the problems of the education of the deaf, but should not be personally involved with the particular program for which the research is to be done. If this separation is not maintained, it is possible that many areas will not be dealt with because the person responsible for tapping the intuitions of the teachers is too involved with the particular program to ask objective and potentially self-critical questions.

The CID scales have been in use for almost two years. They are filled in on all young children by teachers three times a year. The scales only now are ready to be tested as instruments that might measure successfully the progress of children. It was our experience that the determination of reasonable stages in language development was only the first step in developing instruments for use in evaluation. I will discuss the kinds of other information necessary for the development of scales such as ours for the evaluation of children and then mention the special problems involved in evaluating parents.

It seems necessary to specify criteria for rating the behaviors. When our rating sheets were first used, discrepancies among raters indicated that people were using different criteria for rating. For example, for the level *Understands up to 10 words,* people were using behaviors observed in different settings as evidence that the child was indeed at this stage. For some teachers, if a child could understand a few words in a closed set in a therapy situation, he was at this level. Others would rate a child at this level if he could understand up to ten words in the somewhat less structured setting of a group activity in the classroom, while others rated a child at this level only if he could understand the words in a very unstructured classroom activity or outside of the classroom setting altogether. Unless all people involved in the ratings use the same criteria, the ratings will not be helpful in tracing the progress of children from year to year, and it will be impossible to establish similarities and differences among children from different classrooms. A revision of the CID rating scales included specific instructions to the raters about the situations in which behavior should be observed in order for the child to be assumed to be functioning at that level.

A second consideration is the frequency with which a behavior occurs before a child is credited with having a certain skill. Geers felt that children should be given credit for emerging skills, so infrequent occurrences of a particular behavior are counted as evidence a child is at a certain level.

A problem that must be faced, and one for which we at CID don't have a satisfactory solution, is that of deciding whether observation alone is a satisfactory method for determining whether a child has attained a certain level. Although we now depend on teachers' observations of general classroom behavior alone, we are questioning the advisability of developing test situations structured to elicit the language response to be evaluated. There are good arguments for the use of the test situation. First, there is a problem with the use of any observational data. One is never sure whether a particular behavior didn't occur because the child was unable to perform it, or whether the behavior didn't occur because the child was never in a situation in which that behavior was required. Another problem with observational data that is quite likely to arise in dealing with deaf children is that one might underrate children on receptive language and overrate them on expressive language. It is very difficult to measure the receptive language abilities of a child because lipreading ability is hard to separate from language ability. A child may have a command of certain language structures, but lipreading factors may interfere with his ability to understand a sentence that included one of those structures. On the expressive side, a few learned phrases used appropriately can make a person look as if he speaks a more sophisticated language than he actually does.

We probably will decide to provide the teachers with some test situations that they might use to help them to rate their children.

Before language scales can be used as instruments to measure the progress of individual children, it is necessary for the person using the scales to know the length of time a child normally should take to move from one stage to another. Although all children in a particular program may follow the same steps in language development, children are different in the amount of time they need to get to the various stages. If a child who took two months to learn his first ten words also takes two months to learn his second ten, he is not making as much progress as the child who also may have taken two months to learn his first ten words, but learned the second ten in one month. Both may be making poorer than average progress. The progress of an individual child can be compared to the staff's best estimation of the expected progress for the normal child. This operation is crucial because one's prognosis for a child is determined largely by how rapid his progress is at key stages.

People who evaluate parents' progress also need to decide on stages of development, criteria for determining a person has a skill and the length of time expected between stages. The task is even more difficult than the task of evaluating the child because we are not dealing with the attainment of a particular level that can be determined in a controlled situation. It is almost impossible to isolate one of the behaviors one wishes to evaluate from the total situation. It is not possible to set up a situation to test the mother's ability to attend to the child without also involving all other aspects of the communication situation—her using techniques to get the child to look to her lips for information, talking in appropriate language, or responding to the child. Another problem is that progress in a particular skill is usually measured along at least two dimensions: (1) increase in the frequency with which a particular behavior occurs; and (2) an increase in the sophistication of those behaviors. An important skill for a mother to learn is how to set up situations so that her child will look to her lips for information. At first a mother may be able to do this successfully only infrequently, but with time she will be able to get the child's attention more often. Her sophistication in accomplishing this also may improve. A mother at first may have to move directly into the child's range of vision to get his attention, while later she will learn to do things like withhold the objects the child wants until he has looked to her for permission.

Because of these problems, the task of rating a mother is very difficult. Although rating scales are used in evaluating the mother in much the same way as they are used in evaluating the child, we have found video-tape to be very useful in determining objective evaluations of mothers' progress. One video-tape project involved taping mother-child pairs all doing the same task four times during the last year and a half. Five-minute segments have been isolated for analysis. One of the variables we are looking at is the mother's success in getting the child to look at her for a message. As a first approximation we are counting the times the child looks at the mother for the first two words of her utterances. If the mother made 100 utterances in five minutes and the child looked at her lips for 30 of them, the pair was successfully achieving the first step necessary for communication 30% of the time. It is expected that the child's "looking" will increase with time in therapy and will probably level off at some optimum point that is probably much less than 100% for the kind of situation taped. The data are in the process of being analyzed.

In all the areas talked about so far, the input of the classroom teacher is crucial. Only teachers can evaluate the stages of language development of the deaf child, the criteria for saying a skill has been attained, the development of test situations, and the determination of the time intervals expected between stages. Once the rating scales have been developed, however, the only responsibility of the teachers is to fill out the rating sheets on their children. It is now the responsibility of the researcher to figure how the data gathered can be analyzed so that the administrators can get the information they need to be able to answer their questions.

It is assumed that the results of any evaluation will be used to help make decisions about individual children, and in some cases, about the program itself. No approach works the same way with all children. Within the classroom, teachers always are accommodating to the needs of the individual child, but some children cannot be helped by extra work in a classroom that does not entirely suit them. Many alternatives must be available for the child who is making poorer-than-average progress, or the child who is making better-than-average progress. Often teachers are reluctant to suggest changes in the education of a child, because the only evidence of a need for change is their subjective opinions. The level at which a child is functioning and the speed with which he or she attained that level can be matched against the best judgments of the entire staff about the expected performance of children. The amount of information in several completed ratings gives a staff member objective evidence for suggesting that a major change in an individual's education is needed.

Descriptions of the progress of individual children also can be pooled and be used to help make decisions about the conduct of the program itself. If the children who do not make expected progress in their first year in the program are found not to make expected progress in their later years in school, it might be evidence that major decisions about the educational treatment of children can be made earlier than they are now being made.

The research approach discussed so far is just a sophisticated and objective record-keeping system that persons in the service areas can use to answer questions. The questions are asked by the administrators. The research staff then tries to find a way to get the information needed by using the insights of the classroom teacher. The information is then used by administrator to help answer educational questions.

Another question that can be asked by the educational staff is, "Do we need to make changes in our program to more effectively provide services to our clients?" Information that might be helpful in answering this question can be provided by the kinds of studies that are done to describe behaviors that interest the researcher. I would like to give several examples of such studies done at CID, all using the video-tapes described earlier.

In the study of "looking behavior" it was found that the highest percentage of "looks" on the part of the children was 44%. That means that for fewer than half of the mothers' utterances were the children looking at their mothers' faces. It seemed to those who viewed the tapes that the children got very involved in the task and were not interested in conversation. The purpose of doing an activity is to provide a vehicle for language stimulation. This result indicates that some mothers will need more help in evaluating at what point in their performance of an activity the language work should be attempted.

Star Leonard did a descriptive study of the structure of sentences directed to fourteen deaf children by their mothers. Her categories were similar to the categories used by Broen in *The Verbal Environment of the Language-Learning Child,* a study of the sentences directed to young hearing children. Broen found that questions were directed to the hearing children she studied about 37% of the time. Leonard found an average of 14% for the children she studied. This is a rather large discrepancy, even after allowing for differences in data collection. The educational staff can use this information to decide if parents should be encouraged to direct questions to their deaf children.

Janice Duffield studied the techniques parents use to get a message across to their children when their first attempt at communication fails. She examined situations where the message intended was a command. She had expected that there would be a systematic simplification of the method of communication until the child finally understood. This might take the form of a verbal attempt first, followed by a verbal command with a gesture, and finally a verbal utterance with the parent doing the action herself. Duffield found that this prediction was not borne out. Instead, a mother often continued the technique she started with or she changed to a more sophisticated method of communication rather than to a less sophisticated one. The training in the Parent-Infant Program is designed to help the parents to communicate with their children, and the method of instruction is to teach by example. Mothers seldom are told directly what to do. The results of this study indicate that for some mothers an example is not enough.

The research I have talked about has three functions; (1) to help the service staff to better describe the children and parents they are working with; (2) to help evaluate the progress the people are making in achieving the goals of the program; and (3) to bring to the teaching staff information that will help them to make decisions about the structure of their program. Research can very seldom provide any answers to the service department's questions, but it can provide the information the service department needs to help find the answers.

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MATERIALS FOR THE LAST FOUR YEARS

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The conventional way to talk about curriculum in a high school is to refer to the variety of instructional activities planned and provided for pupils by the school. That kind of discussion is all right, I suppose. But it lacks vigor. Curriculum is a vital, moving, complex interaction of people and things in a free-wheeling but purposeful setting. It includes life questions to debate, forces to rationalize, emotions to experience, conflicts to compromise, goals to illuminate, programs to activate and outcomes to evaluate.

On the objective side, for example, Indiana's Department of Public Instruction requires 32 credits to earn a high school diploma. Within those 32 credits must be two majors and two minors with 9 mandatory courses. It is a difficult but nonetheless nice, objective goal that makes scheduling a seemingly simple task. One simply has X number of teachers, with licenses in the various disciplines, assigned to Y number of pupils for 36 weeks. So, what really is there to talk about?

This presentation will not try to express the excitement of working with 200 deaf teen-agers in their last four years of school. I doubt if any paper could. I am simply going to describe some of the things I believe and some of the things we have been doing in Indiana.

Terminating deaf students have towering needs not necessarily alleviated by gearing programs to getting a high school diploma. As you well know, a high school diploma from any school is no longer a guarantee of anything to either employer or registrar. The basic problems we continue to attack are habilitation and degree of literacy. If programs can simultaneously provide credits for a diploma, that is all well and good. But good mental health and improved literacy levels are our main concerns.

All people working with young, deaf men and women continually remind themselves that very shortly their students will have to find a place in our competitive society . . . a society that places a premium on independence, personal responsibility, and productivity.

The criteria for the reputation of our high school department in my estimation is not the number of students accepted into college programs. They represent only about 10% of our student population. We are thrilled, of course, with the fact that the programs we have offered in the past few years have brought the so called "B" class students to college doors. The bulk of our effort has been with the other ninety percent, however. Their development excites us all.

There are so many things that affect student mental health—collectively and individually—and so in turn affect student progress. All of these influences must be considered as materials in the curriculum. Every bit of every student's environment is a learning situation. Learning situations! That's what curriculum is. In that sense, every facet under discussion at this convention is concerned with curriculum.

I would conjecture that all schools employ an immense number of prescriptions for learning . . . prescriptions to enhance mental health and degree of literacy. Special scheduling. Counseling. Medication and prosthetic devices. Tutoring. Peer counseling. Paid work experience programs. Communication classes. Psychometric measures. Group projects. Privileges. Clubs. Athletics. Discipline. Structured responsibilities. Private student conferences. Psychiatric assistance. All of these are extremely important support services to the daily lesson plan.

To develop student mental health and to increase literacy levels, a maximum amount of attention must be paid to the key factor determining quality programs. Teachers. As far as I am concerned, every activity in school should be considered a support service for the educational staff. And the morale of teachers has top priority. I consider myself, for example, as working *for* 19 teachers. Not vice versa!

I think we have come a long way in Indiana in this respect.

For one thing, the administrative staff has had a total of 95 years in the classroom.

Teachers are paid for most extra-curricular jobs.

The superintendent has stopped taking students out of class without the same week's notice he wants from others.

He is still telling Mrs. Jones that it is okay to take her daughter to Florida for a week but he is finally telling her that much of the work will not be able to be made up . . . that lessons can't be sent because they involve experiments in biology and class discussions in literature.

Teachers neither supervise study halls after school hours nor do they handle religious education as an assignment.

They sponsor classes only at their own decision when the students ask them.

They have a privilege card system to withhold social privileges from students.

They do not have to give lengthy explanations to a secretary as to why they need supplies or equipment.

They are not *all* reprimanded because one teacher commits some infraction.

They have academic freedom.

They do not have to sit in weekly staff meetings while the principal reads last week's memos they all saw.

They do not write long reports that nobody looks at a second time.

Their performance reports have nothing to do with students' grades on invalid achievement tests.

They teach five classes a day with at least one preparation period. Teachers of functionally retarded students are given more preparation time.

Preparation periods are sacred. Teachers are never required to fill in when another teacher is ill or to perform other duties at the expense of classroom preparation time.

Their reports on classroom incidents receive complete credence—not the child's.

When they need a break, they get it.

They are not evaluated by me or by the principal on the basis of what we see while walking down the hall.

They are not held responsible when a student loses a book. The student is.

Their classroom key also fits the building, teachers' lounge and the media lab.

A master teacher is a sensitive artist responsible for the molding of minds. The mandate is really quite terrifying. It is the responsibility of the superintendent, principal, and supervising teacher to provide a climate that permits a teacher to function with all of his energy, creativity and understanding. It is the responsibility of the administration to weed out those who do not have ability, sympathy or energy. I suggest that the administration has a judgement responsibility to obtain the best teaching staff available and then turn those teachers loose to innovate and improve the existing program. That specifically includes course content, scheduling, and activities.

I can only guess at the consequences of the long-overdue communication with deaf children's minds in their formative years. Mental health problems should be less. Minds will be working better. Habilitation may be less difficult. Some of us do have concerns about literacy levels increasing appreciably. For literacy levels to increase, there must be an intimate relationship between the kind of communication during a child's entire waking hours and the printed word. A gesture by a Frenchman may take the place of a paragraph. A French cartoon may say volumes. But neither would permit any person to be able to read French. Or any other language! A pantomime of Washington crossing the Delaware will help a person to comprehend that one, single circumstance but it will not give him the wherewithal to read about that event or other events resulting from it.

I am not willing to settle for a system of education that forces a deaf child to be limited. I will not settle for a system that forces a deaf child to learn vicariously only when he is associated with people who can communicate manually. I will only settle for a system that terminates a deaf teenager having the ability to read a technical manual, the latest best seller, and income tax directions. They are all written in English.

I have always believed that deaf children could be superior readers if we could figure out an environment with communication by a method directly transposable to the printed word. Hearing children, for example, have such an environment. Once phonetics become re-established in schools their problems should lessen. One of the difficulties, however, for a hearing child learning to read is the transformation from getting meaning from hearing to getting meaning from seeing. If we could somehow set up an environment communicating English to a deaf child's eyes, that deaf child would be several steps ahead of his hearing counterpart.

While I can only guess about the results of the marvelous expansion of communication to young deaf children, I do not have to guess about one serious problem in high school departments. Too many high school students possess a characteristic that works against their habilitation. They are victims of a trend that continues to exist in formative years. We see the philosophy summarized on posters around school and home. "If you like it, do it." "If it feels good, feel it." "If you don't want to, don't."

The abstractions of responsibility, self-discipline, pride and effort stare us right in the face in the last four years. The very necessary fun and games concepts in planning for beginning children has come to be retained in all grade levels below high school. Motivation has become synonymous with fun.

Think for a moment about the whole tenor of educational philosophy in the past couple of generations. Take a look—a good look—at catalogs, advertisements and general content of training courses. Everyday comes across my desk such items as: "Turn your students on!" "Your students will love it!" "Exciting!" "Fun and games!" The sloganism is usually to the effect: "If the child is not learning, he has not been sufficiently motivated."

Humbug!

With a year-in and year-out misinterpretation of this cliche—

With an overdose of the idea that you can't expect a child to perform unless he likes something, we face in the high school department mental cripples saying, "I didn't do my work because you didn't make me like it." Mother and father get the same thing at home when windows need washing, the grass needs mowing, the house needs cleaning and the laundry has to be done.

It has been forgotten that the burden of learning is on the learner's shoulders. Fun cannot be the basis for teen behavior to produce effort and cause consistent work habits. Individuals must be led to spark themselves.

There is no quick, easy route to true learning. Conscientious teachers have always been concerned with arousing student interest. A teacher is miserable until this rapport is established. Of course, learning can sometimes be fun. But I emphasize the word—*sometimes*. Learning is hard work. It is self-disciplined, mental effort. It is the hardest work a human being ever has to do. To raise children under any other criteria is to lie to them. It is a most serious contribution to deliquency. The human mind will not develop without work and discipline any more than will a gymnast's coordination develop without years of rigorous toil. It is wrong to pretend otherwise. It is worse than wrong to short-change children by giving them only a constant diet of things they like to do. Learning is not the joyful pre-occupation that contemporary education has advertised.

The *continual* pursuit of the trivia of fun in formative years leads to teenagers palled by it all, fed up with cream puffs and fudge; but not possessing the wherewithal to get with the gristle of life.

Do you realize that 50 years ago, when Jimmy came home from school, Mother asked, "Did you work hard, son?". Today Mother questions "Did you have a good time, dear?"

We have to wonder. Is habilitation . . . real habilitation . . . really possible for anyone with that kind of endowment? We must try to obtain a balance between the unreasonable puritiancal ethic and the just as unreasonable fund and games code.

We do try. We have to try. And I am at last seeing the question on a request for references from at least one post-secondary school, "How well does he perform tasks he does not like to do?"

Let me mention some of the things we try. I think it is important to remember that what one teacher can utilize as a technique will not necessarily work for another. And teachers must be allowed to experiment, to make mistakes, and try to find devices which they can incorporate within their own personalities and value system. Every teacher is a very precious, different professional.

We have tried throwing away the grade book locked in teacher's drawer. We set up a manila folder for each student whereby he keeps a running daily average and can immediately see consequences of effort.

Some have taken detailed lesson plans and put them on ditto pages for distribution to students in the class. Many students end up driving themselves more than any teacher could hope to do. They pit students against themselves.

We all use boy/girl relationships instead of fighting them.

Some teachers cease to have difficulty with some classes when students draw up their own code of conduct. Students are many times stricter than the teacher. And the teacher ends up in the delightful position of being thanked for deciding upon lesser punishment than the peers decided.

One of the most fruitful things developed in the last six years is in Friday social studies classes. It is question and answer day. Students have to at first be forced to bring one question to class. A question about anything! By the time they are juniors and seniors, it is a wonderfully profitable day. And would you believe we seem to be getting carry-over on the question-asking bit in other disciplines? It seems to me that pupils should be asking more questions than the teacher does.

We stay loose about the guidance thing. The guidance counselor, or principal or any adult with that assigned responsibility is not always the best person to help a student. We may use a peer who has been through it all and is fairly well adjusted. We may try to find a teacher with whom the student feels free to talk.

The key to many of the more serious problems is confidentiality. And I believe that by now most of our students know they can "unload" without getting expelled or suspended.

Sometimes a walk around campus calms a bad temper.

We have almost gotten rid of group punishment.

We encourage rap sessions between students without any adult hanging over their shoulders to "supervise."

We have scheduled students to tutoring responsibilities with primary children.

Students do all the initiation and coordination for money raising activities, meetings, and activities and workshops.

They do the planning and much of the directing of dramatic productions.

Paid work experience programs are, of course, a must for the majority. Entry into our half-day work program is through a local off-campus rehabilitation center where students see that amount of money earned is in direct proportion to effort.

In the high school department, teachers must gear their efforts to already established personalities and behavior. These teachers inherit the effects of the fun and games environment and the resulting rainbow of immature moods and emotions brought into class. We give teachers support service and encouragement to find other ways to obtain behavior changes.

We have had a great amount of success in one other endeavor to obtain behavior changes toward the acceptance and accomplishment of academic work. We have put material that they can read in the hands of the students. Their effort can make them succeed. Not fail!

The 90% of the student body on which we have been concentrating for the past five years cannot read material written for hearing students having reading problems. In a good many cases, texts and subscriptions advertised for slow readers are perfect for our college bound students.

I wonder if publishers are really putting out material that can be used by hearing children with reading problems.

Whatever, it requires no professional wisdom to remark that material used in a classroom must agree with pupil ability. Unsuitable material only serves to alienate students further from the printed word and we can be quite certain they will *never* learn to read above the elementary level. I am afraid that a great many schools are still taking a look at achievement scores and deciding text material. For example, the deaf child's achievement score is 6.0. Therefore he is given a 6.0 reading, history or science book. This practice may appear perfectly logical to anyone not well acquainted with the education of *any* mind. It is not the practice with children who do not have language problems in the first place. Children must have material well below the top level of their reading ability.

A third grade hearing child with a tested reading score of seventh grade may not skip to a seventh grade text for the simple reason that the seventh grade level assumes many concepts acquired as well as long exposures to the intricacies of reasoning with language and different interests which need time to mature. Much time!

This child will read library books and supplementary material on a higher level for isolated specific reasons but he is NEVER required to reason on the higher level. This child stores up vast reservoirs to be tapped when the time arises.

As for the mid-teen deaf students I am talking about, materials at even the fifth grade level are so sophisticated that they are useless—IF we are to lead and guide along the road to a functioning degree of literacy. These texts contain so much idiom, so many presumptions of environmental learning, vocabulary and complicated sentence structure that they are worse than useless.

We have tried to do something about this problem and the concomitant problem inherent in the fact that publishing houses are the real deciders of all curriculum content in the country . . . not the people on the firing line.

We obtained funds in 1966 to write and print material we had previously found successful in causing reflective thinking in these exceptional children. The first vehicle was American History. It is a four volume work in which we emphasize the reasons for human behavior. Our effort in the next two years was also in the social studies area. We wrote a course in consumer economics in '67 and an introduction to geography the following year. In the summer of 1969 we put out a lab science text, a two volumed English text for our severely functionally retarded deaf teenagers. The techniques involved in the English text are creating near miracles for us. We have had time to do a small experimental model with programmed material for the functionally retarded students we work with. In the same summer of 1969, we worked out a desiderata in two other areas, sex education and reading for that majority I mentioned. Since then we have developed text material in reading for the 10th, 11th and 12th grade levels and an adaptation of a sex ed book we call Sexuality-Morality. The initial adaptation of the latter, however, is really only aimed at junior and senior "A" classes. It was very difficult to do even for them.

We have time to mention only two basic principles inherent within all of this written material. In the first place, if a reader does not possess particular experience backgrounds, he will not understand a paragraph even if every word in the structure is a part of cognition. Let me try to illustrate with one example at perhaps your and my level.

> The most significant quantity in atomic reaction possibilities is the nuclear cross section itself. With increasing energy the cross section continues to rise to a fairly flat maximum within the energy region of interest.

The paragraph means nothing to me because I have not had any experience with the concepts in the paragraph. Vocabulary itself is no problem. The concepts are beyond me and I would have to have many experiences before it would mean anything or be of any significance.

Deaf students get a constant diet of that kind of material. I suggest that we should marvel at the fact that, given his inadequate equipment for the work in subject matter, the deaf students get along as well as he does.

The second principle we incorporated into written material is this: If one is reading at the top limit of ability, he will not understand or react if he is forced to apply immediately learned vocabulary. Again, let me give you an example at say our reading level. The paragraph will be about a point within the concept of double jeopardy. I have altered it a bit to give us all the same problem a deaf student meets every time he opens a book . . . a density of unknown vocabulary.

Oh! But before the students read or view the captioned film, we are told, teach the vocabulary.

All right! Let's do that.

Here is the vocabulary list. You memorize it. Maybe write a number of sentences with the six words. Then read the paragraph. You will have a quiz on it tomorrow.

stuble(-d)—verb; to establish guilt or innocence in a court. noun; trial.
stig—adj., the first of several.
terbin—adj;. the second of two happenings; double.
lipscomb—noun; a danger, jeopardy.
vergle—adj.; fifth.
summent(ed)—verb, to change; to amend.

We will consider a passage of time while you get all the new words fixed in your mind. Now here is your paragraph to read, understand and prepare for a quiz.

> Restuble of a defendant after the stig stuble is inconclusive does not constitute terbin lipscomb. Nor is there terbin lipscomb where a defendant is stubled by separate sovereigns for the stig act. The Vergle Summentment merely bars a second stuble after a stigs stuble under the same sovereign.

I would score maybe as high as 40% on tomorrow's quiz and get bawled out for not having done my homework well.

We found that the following helps when using newly presented vocabulary:

Restuble of a defendant after the stig stuble is (retrial)
(first trial)
inconclusive does not constitute terbin lipscomb.
(double jeopardy)
Now is there terbin lipscomb where a defendant is stubled by
separate sovereigns for the stig act. (tried) (first)
The Vergle Summentment merely bars a second stuble
(Fifth Amendment)
after a stigs stuble under the same sovereign.

It is relevant to mention that we found it is a rare individual who has the skills necessary to write material for the target population. Besides the linguistic requirements and a knowledge of deaf students' first language, a talent in writing is necessary. We were fortunate to find two people to direct our production.

This reading material we have created for student use actually has us frustrated in some ways. It works so well, we must have more. It is only a drop in the bucket as to what is needed. From the requests we get from people and schools all over the country for this and other material, we see that there is the same need in other schools. We have been able to send single copies to over 500 pleas for these *un*advertised materials. There is a great need for a publishing company to print and sell materials that deaf students can use. We do not need any more outlines for teachers. Nor are six weeks summer workshops long enough for authors to do the job. Within our profession there needs to be an institution authoring and publishing material for every grade and subject in schools for the deaf.

Within that 90% of our student body that I continue to talk about we have a small group of severely functionally retarded teenagers. We have about 30 in the Indiana School. A rainbow of problems beset them. Emotional. Perceptual. Physical. They are practically illiterate. Their self image is poor. They are the students never in on anything in school activities. Attention span is extremely short. Their paranoia is severe. Frustration levels are low.

We set up an academic program for them six years ago. The primary aim of all their academic activities is to improve mental health, to make them feel respected, useful, needed.

As far as the academic part of their day is concerned, we cut our class period exactly in half for them and give them many changes of scenery. They organize themselves with officers, develop their own rules of conduct, and plan social activities in full meetings in our social studies lab. Scheduling is difficult and would take too much time to detail for the five groupings we had last year. They have a different schedule every day of the week.

After a four year program, literacy and maturity levels of these students who terminated last month had improved to the extent that all of them qualified for the post secondary training programs for which they applied. Three of the nine plan to go. Another three are going to continue in a full-time status for the same employer who hired them a half day during '72–'73. We expect even greater improvement in the future as we continue to improve their school program.

I have tried to say four things in this presentation.

1. Material in the curriculum means every learning situation in a student's life.

2. Deaf students must have volumes and volumes of reading material which they can pursue independently. The only way to get it is to have an institution established for writing, publishing and selling.

3. Environments in formative years must try to obtain a balance between the unreasonable puritanical code and the unreasonable fun-and-games ethic we now have.

4. Teachers have the key role in education and should receive ongoing support services from administration. They should work in an environment of academic and methods freedom.

Let me conclude with this note:

Consider the superior teacher. Do you realize that all the inducements to monetary improvement in this business of education force her to aim for jobs *OUT* of the classroom?

Let me paraphrase a dream offered by a most intelligent man I heard long ago. I am sure that he will not mind that I do not remember his name for I will always remember his message.

> Imagine this day in education if you can! The superintendent who had fifteen proven years as a master teacher is talking to Mary who is applying for a position at his school.
>
> Mary! You have completed your two year internship. Your credentials are excellent. Your master teacher reports that you have good potential to form and guide human thinking and child development.
>
> I am offering you a job for the coming year. You will teach two classes of children who have no learning problems. They are college bound youngsters with superior drive. You will need two preparation periods per day to plan their learning experiences. We will also give you an opportunity to tutor children with special learning problems. The other half of your day will be involved with scheduling, run-of-the-mill discipline problems, and administrative trivia in support of the full time teaching staff. I can offer you a starting salary of $8,000.
>
> Your future in school here, Mary, will be what you make it. In the first year or two, you will find where your own interests lie and we will have an opportunity to assess your talents. If you enjoy the administrative part of your position, we will be able to employ you at modest increments of about $200 a year.
>
> If you have the appearance of an eventual master teacher, we will consider putting you into the classroom on a full-time basis with perhaps three classes of children having no problems and one or two classes having great difficulty. We will offer you $10,000 in that position with increments of $800 a year.
>
> Perhaps someday, if your teaching talents really blossom, we will assign you the responsibilities of teaching deaf children. Of course, you would have a long way to go in adding to your communication skills. Whatever, I want you to know that that position is at the top of our salary scale. We would pay you $18,000 a year with a maximum in 10 years of $30,000 plus greatly increased fringe benefits.
>
> It has been nice talking with you, Mary. I hope you decide to help us. We have come a long way but there is still so much to do.

LANGUAGE FOR THE FUNCTIONALLY RETARDED DEAF TEEN-AGER

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Introduction

Before any decisions can be reached on what should comprise a language course for functionally retarded deaf teen-agers, the term *functionally retarded* deaf teen-ager must first be understood, as well as something of the nature of the problems which result in functional retardation.

The functionally retarded deaf teen-ager is one who has been unable to acquire a reasonably accurate working use of the structure of the English language system on even the *beginning* level of language learning.

What it means to have a working use of any language system may be defined as follows: 1) when a person knows how to use fairly accurately, and at conversational speed, the structure of the language system for voluntary communications, and 2) when he can recall automatically the units and patterns of the structure, thus permitting his attention to concentrate on content of the message, then we may say that the person has acquired a working use of the language system. Although his communications will usually continue to exhibit errors on the advanced level of language learning, the degree of accuracy acquired makes it possible for others to understand his message.

Functionally retarded deaf teen-agers have not acquired a working use of the English language system. This lack of ability either to send or to receive messages accurately in the English language system does not necessarily indicate subnormal intelligence. This lack of ability does, however, preclude academic achievement for such students until they have acquired a working use of the language structure.

FACTORS AFFECTING LANGUAGE DEVELOPMENT

Since those with normal hearing at four to five years of age have mastered the language system, including even the most complicated grammatical patterns, what explains the remarkably slow progress of our deaf students?

1. Deafness, itself:

By the end of his second year, the normal hearing child will be able to express his needs. At three years of age, he will be using long sentences, including compound and complex structures. The three-year old will also distinguish parts of speech, tenses and moods of verbs. At four years of age, the child will be asking questions continually, and verbalizing almost without stopping. At five years of age, the child will exhibit completed knowledge of the language structure and he will be expressing himself accurately in all kinds of sentences, including hypotheses and conditional clauses. His total output of words per day numbers between 10 and 15 thousand. Even the four-year old may produce more than a thousand words an hour.

From the viewpoint of practice of a highly complex skill, this is of tremendous significance to us in the education of the deaf since language learning concerns the development and automatic functioning of habits. These habits are based on neural, muscular, psychological and emotional activity. Learning is an improvement in performance which occurs during practice.

2. Lack of feed-back and practice:

In learning any language, the consistent imitation of sounds and the consistent mimicry and manipulation of language structures as practiced by the normal hearing child provide him with constant feed-back as he expands his ability to use that language. In early stages of language learning, feed-back is of great importance, useful to the learner not only as a stimulus in private practice situations which do not involve a second person, but feed-back is also useful in a monitor function enabling the learner to hear and correct his own errors. The very young hearing child models his sound system and his language system after those of individuals in his language environment, and because of feed-back and memory span he can continue his imitations and manipulations of language when he is alone. It goes without saying that the young deaf child receives no outside sound stimulus, no feed-back, no satisfaction, no personal gratification in practicing English; and, through a resulting lack of practice, he does not acquire the various abilities which comprise the highly complex skill—manipulation of language.

3. Frustration and lack of self-motivation:

Because the young deaf child has not acquired enough language structures, communication with him is difficult for hearing parents. Eventually both the parents' and the child's frustration affects the language environment. The child may become less responsive and may develop considerable resentment and resistance to using the English language system, when signs and pantomime are easier. His parents may feel the same way. As a result of frustrating language experiences, the lack of personal motivation to learn English and the ease of communication, which pantomime and signs afford, both greatly affect progress of our deaf students in learning the English language system. Communication with the deaf child is obviously much less advanced than it is for the child with normal hearing and is based on the gestural-visual level of language behavior. The deaf child's language behavior remains at this level for a long period of time and is marked by a paucity of correctly-used English language structures and vocabulary.

4. Operation within a distinct language system:

The sign language, per se, is based on this gestural level of language behavior and does not accommodate the structures of other languages any more than English accommodates Chinese. "Bright morning!" is perfectly good Chinese, but ridiculous English. In the sign language, to quote one child, "Town you me go" is as understandable to the deaf child as the structure might have been to an ancient Roman, but it is not within the English language system.

The sign language and the English language are not the same language system. The deaf child, for whom pantomine and signs are easier, will not have as his mother tongue that of his hearing parents—the English language system. He will fit the vocabulary of the English system into his sign language system, but he cannot always maintain an equal syntactical balance between the two language systems. One or the other system will dominate, depending upon the situation of the moment. In other words, the deaf child's language behavior will vary in accord with that of the person to whom he is momentarily speaking.

5. Previously conceptualized, erroneous structures:

An individual's fluency in a second language will lag behind his proficiency in the first. For most deaf children, pantomine and later the sign language is their first language, not the English language, and these will continue to influence the deaf child's performance in any other second language system. The student approaches language learning with an already established set of patterns in which both his overt and internalized language behavior operate. His conception of the structures of the second language is perceived through the automatic operation of his first system, which may set up interference with correct production of the target language structure.

For example: (signed) "Student you?" In the sign language, no verb is needed to express this meaning, nor is the article used, and word order is opposite to that of the English language structure. There is no correspondence between the two structures, but the functionally retarded deaf teen-ager *thinks* he is signing an accurate communication in English. His concept of that structure is influenced by interference from his first language system.

In the learning of a second language, structural patterns must be practiced over and over again in order to make them completely automatic. Already established language patterns which are incorrect must be unlearned, and the correction must be made a habit. The deaf student does not fully realize what the extent of his effort must be, nor, very often, do his teachers who may be as naive about what is required in language learning as their students.

6. "Hit and run" language teaching:

The fact that one speaks a language does not qualify him to teach that language. A native speaker is not usually able to analyze his own language nor explain its various elements since he is not usually conscious of its structure. A recent example of the fallacy that native speakers are the best qualified to teach the language occurred in Indiana when immigrating Cubans with professional backgrounds—doctors, lawyers and teachers—were invited to come to Indiana, given university courses for teacher certification in Indiana, and hired by the public schools. Widespread dissatisfaction ensued and students exhibited chaotic confusion in their learning of Spanish.

A language teacher must know the linguistic description of the structure of the language he is to teach, as compared to being able to recognize the various parts of speech, such as subjects, objects, pronouns and verbs. A language teacher must also know the linguistic aspects of his students' language. He must know where the two systems differ and where they are the same since points of difference cause problems in learning. The language teacher must be able to do his own analyses of the two systems in order to formulate his approach to the individual problems of each student, because in learning a second language, mere vocabulary is not a problem—structure is. To learn structure requires massive amounts of rapid-fire, nonwritten drill work for *each* point of difference.

For a class of functionally retarded deaf students, the language teacher must be able to recognize, isolate, select and *eliminate* elements or whole variations which are *unessential* to a *basic* system of communication which this type of student has not yet acquired.

For effective language teaching, comparative linguistics, the psychology of language learning, the age, mental capacity and educational background of each student cannot be ignored.

7. *Psychology of learning a second language:*

The psychology of learning a second language is not the same as that of learning the first. Motivation to learn a second language is not as great as it is to learn the first language, because the learner knows he can always fall back on his first language system if he fails to communicate correctly in the second language.

Very young students will adapt themselves easily to the practice of structural units with the repetitions necessary to learn them. They need no explanation of grammar, whereas the older learner often does. By the time a student has gone through several years of school in courses which are of a problem-solving nature, he has been conditioned to the fact that explanations are required—for example, in: arithmetic, science, history and reading—and he may be looking for an explanation in his language class as well. Many teen-age students seem to set up a block against a new structure until that structure has been analyzed for them. Then they can accept the structure and comprehend its use in drill sessions. Explanations or analyses of a new structure must be brief, to the extreme, for functionally retarded deaf teen-agers. They must be limited to a one minute, two to three sentence, elementary, or even *primitive* explanation given in signs and finger-spelling. Then the class should immediately move to a rapid-fire, finger-spelled drill session of that *one* structure.

The direct method, or the natural method, which assumes that the student will learn language by being exposed to it in much the same way that a young child learns his native language has long been passé in the teaching of modern foreign languages. It simply does not work for the older learner for whom language learning must be more structured than it need be for the pre-school child. Pre-school children *can* learn a second language by the direct method; but the older a learner is, the less he adapts to this method. He will make considerably less progress than the pre-school child until given the explanations which his thinking requires.

Some students learn more quickly through activity, or through memorizing rules, sentences or dialogues. Some learn better through analogy and others learn better through making comparisons. Age is a factor in this regard.

8. *Ability to learn a second language:*

Obviously, everyone can learn a first language; but, can *everyone* learn a second language? We do not yet know with complete certainty. The ability to learn a second language varies greatly among individuals since there are so many factors involved. To name a few, there are:

(a) the verbal aptitude as separate from general intelligence
(b) the memory span
(c) the attention span
(d) the degree to which a learner is observant, aware and flexible
(e) the degree of self-motivation a learner brings with him
(f) the extent of the learner's volition to learn
(g) the extent of the learner's will-power to learn
(h) the extent of the learner's cooperation to learn.

Of the above factors in language learning, the most important are the student's will to learn and the extent to which he will cooperate mentally in drill sessions and in other activities designed to produce a habit. A group of students being taught in the same class by the same teacher will progress at different rates and with varying degrees of proficiency and accuracy. Although the teacher can manipulate the students' motivation and will-power to a certain extent, language learning can take place only when the student, himself, *wills* to learn. Students without the will to learn may participate in drill sessions, but language learning will not result.

9. Past school experience:

Characteristics of the functionally retarded deaf teen-ager seem to produce the composite picture of a student who has little or no self-motivation, who projects a poor self-image, lacking in confidence, and whose volition and will-power to learn have been completely broken down and destroyed by textbooks he can't understand, and by embarrassing language experiences with relatives, or with oral teachers, who have berated him for his stupidity. This student's only rewards for his years in school are a long line of F grades and a sense of frustration. About the only inherent facet of personality remaining to this student is his sense of cooperation—and *that* is *all* the high school language teacher has left to build on, too!

This type of student brings with him enormous language problems. Self-confidence must be built up and returned to the student. The attention span to language must be lengthened. Erroneous language habits must be combatted in ways in which the student is not aware. However, language habits once-learned are next to impossible to change. Academic prognosis for this student—*with normal intelligence*—is extremely dim.

WHAT CAN BE DONE?

Basic communication

Since the functionally retarded deaf teen-ager has not yet acquired a working use of the English system and cannot accurately express even simple needs or wishes, and since he is almost completely lacking in self-confidence regarding language, it becomes necessary to construct and limit his course of study very carefully.

1. Language structures presented to him must be very short, and on the *beginning* language level. All variations of the structure should be eliminated so that the remaining structure is the most basic one, and is the one to be taught. For example, if teaching question forms, first teach the question with *do*, as in:

Do you see?
or:
Do you know?

When the first structure is mastered, another structure should be added to it. For example, questions with *what* or *how*:

What do you see?
or:
What do you know?

Language structures must be graded as to difficulty for the older learner on the beginning language level, and should contain one concept, only. For example, to enable functionally retarded students to handle comparison of adjectives, the structures presented at first must be graded and limited to one concept like the following sentences:

Tom is tall.
I am taller.
Bob is the tallest.

NOT, for example:

I am taller than Tom, but Bob is the tallest.

There is too much "hit and miss" language teaching which demonstrates lack of knowledge of the subject and helps produce the problems we see in these functionally retarded teen-age students. A student on the beginning level of any language cannot be expected to handle several linguistic units of the target language in any one sentence, since each unit, newly-learned, has not yet become an automatic part of the student's internalized language system. A student who tests out at a 3.0 reading level cannot, for instance, reproduce language on that level,—either written, or finger-spelled. Inability of the teacher to realize the complexity of language structure stems from lack of training and can best be remedied by the studies of structural linguistics and comparative linguistics.

The Fitzgerald Key, although still widely used, is not only unnecessarily complicated, but when used by those without backgrounds in structural linguistics, it is not at all effective in avoiding structural confusion in student language.

2. Vocabulary on the beginning level is concrete rather than abstract, and must be held to a minimum while students are learning structures. Vocabulary at this level, is chosen specifically to assist in expressing personal needs. It may be expanded outward to include the environment after structures are mastered, but vocabulary must be limited while structures are being learned.

3. Tenses of verbs cannot be used arbitrarily as we use them in normal conversation or in teaching situations. They also are held to a minimum until structures are mastered. Structures are built on three tenses: present, simple past and future. Progressive tenses are not used on the beginning level, nor are they completely necessary. Their early introduction accounts for confusion in the teen-ager, who cannot differentiate between the past progressive, or imperfect tense, and the passive. For example, students do not comprehend why the following sentence is correct:

"The car was wrecked."

But this one is incorrect:

"The man was wrecked the car."

Students learn the simple past and the past progressive tenses in primary grades. They will learn the following two structures:

"Dick and Billy fought after school."

and:

"Dick and Billy were fighting after school."

Then, because of too early an introduction to the passive tense, the children become confused with *were fighting* and *were fought.* Letters that they write to their parents reflect such structure confusion which becomes:

"Dick and Billy were fought after school."

Structure confusions become part of the individual student's internalized language system, and by the time he reaches high school age, the erroneous structure is so automatic and ingrained, that we can do very little in subjugating it.

Automaticity

As differentiated from learning in a couse involving problem solving, such as arithmetic or science, language learning is highly complex, requiring acquisition of skills and establishment of automatic neural responses. The student moves from simple, automatic skills at the beginning level to abstract thought on the advanced level, where he may be required to make hundreds of syntactical and lexical choices per minute.

How can we assist in setting up the necessary automatic neural responses? If something is to become automatic, it must be practiced.

Language drills take numerous forms, but all have in common the requirements of:

1. massive amounts of practice and repetition by the learner
2. necessity of immediate reinforcement
3. logically spaced review periods for *each* structure after it has been mastered in class drill.

Immediate reinforcement is needed by the learner so that he can continue to participate in the drill with confidence and so that he will *not* learn a partially correct response.

Review should be based on the law of geometric increase in permanence. Permanence is the period of time during which the response can be remembered and produced voluntarily. The law of geometric increase of permanence states that the length of time in which a unit of language may be remembered increases by a ratio of two to three times the period of non-use following its previous correct use. After any one particular structure has been brought to a satisfactory level of performance in class, reviews of that structure should occur on the next day and on the following class days: the third day after the first review the ninth day, the twenty-seventh, and so on thereafter.

HOW CAN BASIC COMMUNICATION BE SET UP?

Drills

A great deal of the practice and repetition required for language learning can be provided by means of very carefully structured language drills. Each series of repetitions in a drill is designed to combat one erroneous habit, or to produce correct performance of one structure, only.

Before each drill begins, the teacher explains to the class, by means of signs and finger-spelling, what type of response is expected and what type of cue is to be given to the class. Group or individual responses should be finger-spelled. Signs may be used for those words having no inflection. Individual responses must not be demanded until absolutely *no* individual difficulty is noted in the group response. All drills must be rapid-fire for purposes of habit formation. In a language class, students should be actively producing language at least eighty-five per cent of the time. If a student should have difficulty in answering, it is the teacher's immediate responsibility to provide partial cues for the response expected, since *no* language learning can take place during enforced inactivity of students while a laborious response is elicited from *one* individual.

Written drills should follow signed and finger-spelled drills during the same class hour. Papers should be checked while the students are writing, since, in language learning, immediate reinforcement is of such great importance. For the functionally retarded teen-ager, *all* written work should be done in the classroom, under the teacher's eye. Language homework should *not* be given these students. The structure under practice is not yet an automatic response of the student, and may be distorted through interference set up by previously conceptualized, erroneous structures. Incorrect written work only serves to reinforce the erroneous language habit.

Language drills like the samples which follow have been found to be effective in setting up desired student performance, but should, by no means, constitute the sole method of teaching.

1. *Simple substitution drills*

This type of drill lends itself very well to teaching structures. New words are to be substituted in the same place in a sentence on each repetition by the class. The teacher finger-spells a short sentence or a question and the class repeats it. The teacher then cues another word by finger-spelling it or by pointing to a picture or to an object. The class repeats the sentence substituting the new word. For example:

Teacher: How does she know?
Class: How does she know?
Teacher: Drive.
Class: How does she drive?
Teacher: Cook.
Class: How does she cook?
Teacher: See.
Class: How does she see?
Teacher: Write.
Class: How does she write?

And the drill proceeds through five to ten such changes. The purpose of this drill is to force students to add the inflection to the verb. By not explaining this purpose to the students, their attention is forced to the change of words and *not* focused on the actual point of difficulty, thereby forcing them to build up a habitual response with the inflection.

2. *Variable slot substitution*

The drill work is accomplished in the same way as it is in the simple substitution drill, but is more difficult for the learner since memory span and attention are not focused on the same point. Attention is forced away from the point of difficulty—again the inflection of the verb. After directions have been given to the students, the drill begins:

Teacher: How does she run?
Class: How does she run?
Teacher: He.
Class: How does he run?
Teacher: Read.
Class: How does he read?
Teacher: What.
Class: What does he read?
Teacher: She.
Class: What does she read?

3. *Multiple substitution*

Two to three changes per sentence will be required. One cue may be in the form of pictures, the other finger-spelled. Attention load is forced away from the point of difficulty—again the inflected verb:

Teacher: (Points to a picture of a coke.)
(Finger-spells) Do you want a coke?
Class: Do you want a coke?
Teacher: (Points to a picture of a mini-bike.)
(Finger-spells) He.
Class: Does he want a mini-bike?
Teacher: (Points to a picture of a car.)
(Finger-spells) She.
Class: Does she want a car?
Teacher: (Points to a picture of a bicycle.)
(Finger-spells) I.
Class: Do you want a bicycle?
Teacher: (Points to a picture of a plane.)
(Finger-spells) They.
Class: Do they want a plane?

4. *Transformation*

This type of drill may be used in practicing questions. Functionally retarded students need much practice in formation of questions, because it is usually the teacher, in their experience, who does the asking. These students exhibit much confusion in attempting to ask questions.

In this drill, attention is forced away from the point of difficulty—the change in word-position of the inflection—and automaticity is forced on the learner. The teacher finger-spells a sentence which the class transforms to a question. Pictures may also be used as multiple cues during review sessions *after* students perform the transformation with ease. For example:

Teacher: We like corn.
Class: Do we like corn?
Teacher: He likes corn.
Class: Does he like corn?
Teacher: She likes onions.
Class: Does she like onions?
Teacher: I like hamburgers.
Class: Do you like hamburgers?
Teacher: You like cokes.
Class: Do we like cokes?

These last two responses by the class are difficult at times, because a change of person is required, and individuals may show considerable difficulty in understanding this concept until long after the change has been mastered. Learning the *form* of a structure in no way assures learning the *content*, or meaning, of that structure. These are two aspects of language learning in which learning may take place at varying and distinct rates. For instance: one may notice a slang expression, remember it and be able to reproduce it before finding out what it actually means.

5. *Addition*

In this type of pattern practice drill, the length of the sentence is increased to help focus attention away from the point of difficulty. After directions are given, the drill begins:

Teacher: Jane eats lunch.
Class: Jane eats lunch.
Teacher: At twelve o'clock.
Class: Jane eats lunch at twelve o'clock.
Teacher: Everyday.
Class: Jane eats lunch at twelve o'clock everyday.
Teacher: With her friends.
Class: Jane eats lunch at twelve o'clock everyday with her friends.
Teacher: In the cafeteria.
Class: Jane eats lunch at twelve o'clock everyday with her friends in the cafeteria.

If students on the beginning level show any difficulty with the increased number of additions, the drill should consist of two or three sentences with fewer additions until the memory span of the students has increased sufficiently to allow them to perform on a satisfactory level.

Discussion

Great interest shown in discussion.

DEAF STUDIES IN THE ENGLISH CURRICULUM

Robert F. Panara, professor of English and Drama, National Technical Institute for the Deaf, Rochester, N.Y.

What do we mean by "Deaf Studies"? Where is its place in the schools and classes for the deaf? How do we teach it? Before we attempt to answer these questions, let us consider some of the more salient trends in contemporary education and the problem of teaching our multi-cultured society.

Not very long ago, I happened to read an article in *The English Journal* entitled, "American Indian Culture: Promises, Problems, Possibilities", which raised two important questions. The first: "Can a white teacher in any sense at all communicate to his classes what it is, or was, to be an Indian in white America?", Stensland (1971: 1195). As might be expected, the answer was quite negative in view of the fact that the time "when every university has a professor with even some Indian blood to teach Indian Studies is in the future, and still further in the future is the time when every high school has an Indian teacher, even in states where there is a fairly large Indian population", Stensland (1971.) Accordingly, the writer proposed that the most logical step to take in communicating this truth was to provide students with the opportunity to get "the inside story" through the medium of literature written by, for, and about Indians. The second question raised by the author was: "Why should we teach it?", Stensland (1971). The answer should be obvious to every teacher in America who has made an effort to honor and understand the human spirit.

It should be obvious, moreover, that one of the more interesting movements in the socio-cultural revolution of our time is the tendency to provide "a place in the sun" for all those minority groups and disadvantaged peoples of today. Thus, the Negro is granted increasing opportunities to enjoy the rich cultural heritage of his race by pursuing research in Afro-American Studies, and similar opportunities for the "pursuit of happiness" are available to those other minority groups whose interests lie in Latin-American, Asian-American, and other ethnic studies, Panara (1970: 509).

This awareness of all minority groups for the unique contributions of their own kind should not in any way be constructed as a polarization or a drifting away from the mainstream of American society. Rather, and as one writer has observed in dealing with a social study of Italo-Americans, it serves to interpret the problems, the progress, and the life-style of such minority groups by viewing it "in the context of the total American experience.", Iorizzo and Mondello (1971). In other words, it is time that these peoples are "studied as the Americans they are", Iorizzo and Mondello (1971).

Similarly, it is time that the deaf are studied *as the human beings they are*—as living representation of the experience of *Everyman* in his journey through life. Certainly, the experience of the deaf has followed the same pattern of oppression and neglect, alienation and despair, perseverance and progress as that of *all* other Americans. However, the proper study of their kind has yet to be acknowledged, much less initiated, in our schools and classes for the deaf. Can it be that, in our zeal to educate and rehabilitate the deaf, we have treated them as an *object* instead of as a human being, as unwittingly as the phonetics professor treats the Cockney flower girl in Shaw's *Pygmalion?*

Truly, the paradox of our time is that we are inundated with thousands of professional books and articles dealing with the problems of deafness and the deaf—physiological, psychological, sociological, educational—yet, so little attention is given to the literary and cultural image of the deaf.

How can we account for the increasing appearance of deaf characters in modern literature? What is their function? How are the deaf depicted in fiction and drama? Are these characterizations valid? Do they compare with representations of non-deaf characters in the sense of having common problems and experiences? And, turning to the realm of biography and non-fiction, what about the "success stories" of deaf people who have made significant contributions to the larger world of man—in the arts and sciences, education and industry, in the world of sports? How do the deaf identify themselves with these fictional characterizations and success stories? What can they learn from such studies?

Evidently, the time has come for us to seriously consider the place of Deaf Studies in our schools and classes for the deaf. We already have the rationale for such a thrust or movement in the example of the many colleges and high schools for the hearing which offer a variety of ethnic studies to interested students. We also have the needed precedent in the recent break-throughs at Gallaudet College (Washington, D.C.,) which initiated a course, "The Deaf in Literature", in 1972, and at the Rochester Institute of Technology (Rochester, N.Y.), where a similar credit-bearing course in "Deaf Studies" will be offered to interested deaf and hearing students, beginning with the Fall Quarter, 1973.

In almost every school and college, the place of these special studies fits nicely in the English curriculum, inasmuch as this area includes the study of the Humanities. Most of the subject matter is classified under Poetry, Fiction and Drama—although factual studies in the form of Social History, Biography and Personal Narrative are equally germane, in view of their common capability to provide social criticism, motivate achievement, and stimulate creative expression.

All this should serve to add new blood to an already jaded English curriculum, and it may prove just the incentive needed by most deaf students at the advanced school level where the development of communication skills is of paramount importance. A course, or "honors program", in Deaf Studies should encourage the habit of independent reading; it could be the catalyst for spontaneous class discussions and ex-temporized talks; and it might challenge the deaf student to write more extensively, such as when comparing his own experience with that of a deaf character in a story or when reporting on the achievement of some outstanding deaf sculptor, architect, or baseball player. And, for the student who elects to read the published works of deaf authors, he may even be inspired to write a little poem or short story of his own.

Needless to say, the opportunities for discovery and involvement can be as exciting as the quest or mission itself in search of relevant materials for a program in Deaf Studies. I say this from personal experience, having spent the last 10 years in a scholarly adventure that sometimes seemed like a wild goose chase or an endless "tilting with windmills" in the attempt to realize "the impossible dream". Happily, it didn't turn out to be a mirage, and there was a little pot of gold at the end of the rainbow, after all. A brief review of the literature should bear this out, as should the accompanying bibliography on the subject of Deaf Studies.

Because of limitations in time and space, it will be necessary to restrict this survey to only those works which are generally available in the libraries and publishing houses. These include both hardbound and paperback editions, as well as periodicals such as *The Silent Worker*, *The Deaf American*, *The American Annals of the Deaf*, and *The Volta Review*. For those who may wish to dig deeper into the past and cope with the problem of rare books or editions no longer in print, I shall be glad to distribute reprint copies of two articles that I have written on the subject, namely: "Deaf Characters In Fiction and Drama" (*The Deaf American*, May, 1972) and "The Deaf Writer in America: From Colonial Times to 1970" (*American Annals of the Deaf*: Sept. and Nov., 1970). Additional reprints are available on request via NTID.

DEAF CHARACTERS IN FICTION

In developing any program or syllabus in Deaf Studies, at the very center should be the study of deaf characters in fiction. They reveal the universal deaf adult or deaf child in all of his complexities. They also hold up the mirror for the non-deaf reader to view his own complexities and reflect upon the coincidences. It takes imagination to see reality, and the increasing appearance of deaf characters in modern fiction stresses the truth that they are used for a twofold purpose—to evoke a sympathetic understanding of their special handicap and to symbolize the large and universal problems of Everyman.

The best known novel featuring deaf characters is that outstanding work by Carson McCullers which was also popularized as a motion picture, *The Heart Is A Lonely Hunter* (1940). A bizarre group in a Southern town—a tavern owner, a teenaged girl with musical ambitions, an alcoholic radical, and a Negro doctor—confide their troubles to John Singer, a deaf-mute, whose only outlet for self-expression is with a mentally retarded deaf-mute. The story of these individuals symbolizes the loneliness of the human heart and man's eternal need of companionship and communication. (Houghton Mifflin; Penguin Book).

A somewhat similar theme is expressed in Joanne Greenberg's recent novel, *In This Sign* (1970), which also tries to reproduce the language and idiom of the deaf illiterate by method of the flow of consciousness that reflects their psychological states and underscores the problem of communication. Abel and Janice Ryder, a deaf-mute couple, exist merely to pay off a debt of 20 years, during which time their hearing daughter provides their sole link of communication with the outside world. It is a moving plea for understanding the educational deprivation of deaf illiterates and their total dependence on sign language. (Holt, Rinehart, Winston, 1970; Avon Books: $1.25).

Another searching study of the deaf illiterate is in that fine novel by Prudence Andrew, *Ordeal by Silence* (1964), a fictional history focused on the time of Henry II of England, immediately following the murder of Thomas a-Beckett. The main character, however, is Philip Ganter, an illiterate deaf-mute. His story is told posthumously by 10 people, drawn from all walks of life, who testify before a Cardinal of the Church to determine whether or not the deaf mute is worthy of canonization following the miracles which the eye-witnesses vouch for in his favor. As Ganter's story is unfolded, we gradually become aware of his holy, simple life, of his attraction and devotion to the Church and "the good life", despite his illiteracy and the many hardships he experienced because of social prejudice, brutality and ridicule. The book affords an excellent study of the medieval lack of imagination in finding ways to educate the deaf and of the strong discrimination against physical handicaps by the Church and society. (Putnam's Sons, N.Y., $3.95).

For students interested in archaeology and adventure, there is *Silence In Crete*, written by Elisabeth Ayrton (1964). This popular romantic novel tells the story of Arkas, a young Cretan archeologist, who is left totally deaf from a wartime explosion. Bitterness and suspicion pervade his world of silence and distort a natural aptitude for archeology into illegal excavations with a gang of thieves who care nothing for preserving the marvels of antiquity. The story of how Arkas averts disaster and a near tragedy, of how he undergoes a change of attitude to society and is rehabilitated by the aid of sympathetic friends, most certainly should strike a responsive chord in the deaf high school student, particularly those who have still to recover from the shock of a hearing loss. Moreover, the effect of having the main character tell his own story adds to the realism of the themes of loneliness and the breakdown of communication. (William Morrow & Co., N.Y., $3.95).

Another book dealing with the psychological effects of sudden deafness is Rachel Field's absorbing novel, *And Now Tomorrow* (1945). Emily Blair, the main character, is rich, beautiful and envied by many people in the staid New England town controlled by the family fortunes. She is also passionately in love and engaged to be married when, suddenly, she becomes totally deaf from an attack of spinal meningitis shortly after her twenty-first birthday. In the same year, the Blair Industries suffer a reversal of fortune and the townspeople are divided in their loyalties to the Blairs when the employees go on strike to establish a workers' union. Emily also discovers that her fiancé has been unfaithful and has started to keep company with her own sister. The story of how she endures these humiliations, of what she learns from her personal tragedy—why people admire her, who will remain loyal and who will desert when misfortune strikes—also serves to illustrate the truth that the handicap of deafness can be a blessing in disguise and that adversity will often serve to strengthen the human character. (Macmillan Co., N.Y., $2.75).

A book well worth reading, especially by mature students, is Margaret Kennedy's provocative novel, *Not In The Calendar* (1964). Subtitled "The Story of An Unorthodox Saint", it is about two English girls—Wyn Harper, a deaf mute believed to be mentally retarded, and Caroline Knevett, a resourceful hearing companion who learns to communicate with Wyn by inventing games and developing their own symbol language. This begins a lifelong friendship which has lasting consequences despite the fact that the two girls are separated and do not meet again until they are grown women. By then, Wyn—who was adopted by a wealthy family with a deaf daughter—has become a distinguished artist, and Caroline decides to dedicate her life to freeing other deaf-mutes from the dungeons of silence and gloom. A study in positive thinking and liberal attitudes, the novel should inspire both student and teacher. (Macmillan Co., N.Y., $4.95).

Students at the Junior High School level, as well as those more advanced, are sure to identify with the childhood experiences of the deaf boy in Veronica Robinson's short novel, *David In Silence* (1966). When 12-year old David moves into a small English town, he faces various reactions among the neighborhood children. Some are friendly, but others are actually mean—for David is totally deaf. One of the boys, Michael, takes a special interest in David and learns sign language. They soon communicate and become best friends. Eventually, David wins the friendship of other children who learn to admire his courage when he takes a risk and does something that no one else dares to do. (J. B. Lippincott Co., N.Y., 1966, $3.50).

Another book about children's experiences with a deaf newcomer in their midst is Jerry West's exciting mystery story, *The Happy Hollisters and the Haunted House Mystery* (1962). Pete and Pam Hollister enlist the members of their "Detective Club" to help old Mrs. Neely get rid of the "spooks" that haunt her Antique House and threaten to ruin her flourishing business. One day, they meet Charles Belden, a deaf boy who is spending the summer vacation working at a nearby farm. They quickly become good friends and invite Charles to join "the Detective Club". Soon all the members have learned the finger alphabet from Charles and this helps them to communicate in secret silence while on the trail of two men whom they suspect are plotting against Mrs. Neely. After an exciting hunt, they solve the riddle of the "ghosts" hidden in the haunted house, helped no little by Charles' alertness of vision and his skill in lipreading. For these feats, Charles is rewarded with a medal from the Police Officer, along with the other members of the Club. (Doubleday & Co., N.Y., 1962. $3.95).

The foregoing represents a sampling of fiction works which could be used to introduce a program in Deaf Studies at the high school level. A number of other books are also available in print. These include novels, short stories, and plays which feature deaf characters in major or minor roles.

The following bibliography (both Fiction and Non-Fiction) is by no means a complete listing, and there is a continuing need for further research and dissemination of information. Titles marked with an asterisk (*) are intended for younger readers and for those students with certain reading disabilities:

I. DEAF CHARACTERS IN FICTION AND DRAMA

A. NOVELS

*Cable, Mildred and Frency, Francesca. *The Story of Topsy: Little Lonely of Central Asia*, London: Hodder & Stoughton, 1957.

Calisher, Hortense. *The New Yorkers*, Boston: Little, Brown & Co., 1969.

Canfield, Dorothy (Fisher). *Bonfire*. New York: Harcourt, Brace & Co., 1933.

Hugo, Victor. *The Hunchback of Notre Dame*. Random House Modern Library Edition; also available in paperback: Norton; Bantam; Everyman.

Huxley, Aldous. *Chrome Yellow*. New York: Doran Co., 1922; Sun Dial Press 1937.

Salinger, J. D. *Raise High The Roof Beam, Carpenters*. Boston: Little, Brown & Co., 1963; Bantam Books, 1965, ($.75).

Thompson, Morton. *Not As A Stranger*. New York: Scribners Sons, 1954.

Trevor, William. *Mrs. Eckdorf in O'Neill's Hotel*. New York: Viking Press, 1959, ($5.95).

*Wojciechowska, Maia. *A Single Light*. New York: Harper & Row, 1968; Bantam Books, 1971, ($.75)

B. MYSTERY NOVELS AND DETECTIVE STORIES

*Creasy, John. *Deaf, Dumb, and Blonde*. New York: Doubleday & Co., 1961.

*McBain, Ed. *Cop Hater, in The 87th Precinct: A Trilogy*. New York: Simon and Schuster, 1959, ($3.95).

*McBain, Ed. *Let's Hear It For The Deaf Man*, New York: Doubleday & Co., 1973, ($5.95).

Queen, Ellery. *The X, Y, Z Murders: A Trilogy*. New York: J. B. Lippincott Co., 1933.

Queen, Ellery. *Drury Lane's Last Case*. Avon Paperback, 1933, ($.35).

C. SHORT STORIES

Bierce, Ambrose. "Chicamauga", *Twenty-nine Short Stories*, Wm. Peden (ed.), Boston: Houghton Mifflin Co., 1960 (paperback).

Dickens, Charles. "Dr. Marigold", *Christmas Stories*, New York: Thomas Crowell & Co., 1935.

Maupassant, Guy. "The Deaf Mute", *Complete Short Stories*, New York: Doubleday & Co., 1955.

Turgenev, Ivan. "Mumu", *Famous Dog Stories*, New York: Doubleday & Co., 1948.

D. DRAMA

Harris, Elmer. *Johnny Belinda,* (A play in three acts), London and New York: Samuel French Publishers, Ltd., 1939.

Inoesco, Eugene. "The Chairs", *Four Plays,* New York: Grove Press, Evergreen Paperback, 1958, ($1.95).

O'Neill, Eugene. "Warnings", *Ten Lost Plays,* Random House, 1914 and 1964, ($6.95).

See also the following dramatic productions of the National Theatre of the Deaf as reproduced on *film* by Captioned Films for the Deaf (U.S. Office of Education, Wash., D.C.):

Gianni Schicchi", an operetta by Puccini.
"The Tale of Kasane", a Japanese Kabuki play by Namboki.
"Tyger, Tyger and Other Burnings", dramatic readings of classic poems.

E. ANTHOLOGY

An excellent selection of excerpts from novels, including several complete short stories, can be found in an unpublished work of Xeroxed material: *The Deaf in Literature,* edited by Trenton Batson and Eugene Bergman (Gallaudet College Bookstore, 1972, ($5.50). This work includes the following anthology of deaf characters in fiction:

"Pierre et Camille", a short story by Alfred de Musset.
"Dr. Marigold", a short story by Charles Dickens.
"Mumu", a short story by Ivan Turgenev.
"The Deaf Mute", a short story by Guy de Maupassant.
"Chicamauga", a short story by Ambrose Bierce.
Not In The Calendar, a novel by Margaret Kennedy (excerpted chapters).
*"Why It Was W-On-The-Eyes", a short story by Margaret Montague.
King Silence, a novel by Arnold Payne (excerpted chapters)
A Voice From The Silence, a novel by Howard L. Terry (excerpted chapters)
"Deaf Writers in America", a survey by Robert F. Panara.

II. NON-FICTION (PERSONAL NARRATIVE AND "SUCCESS STORIES")

A. AUTOBIOGRAPHY

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*Parsons, Frances. *Sound of the Stars,* New York: Vantage Press, Inc., 1971, ($5.95).

Wiggins, Julius. *No Sound,* New York: Silent Press, 1970.

Wright, David. *Deafness,* Stein & Day, 1970, ($5.95).

Keller, Helen, *Helen Keller's Journals,* New York: Doubleday, 1938.

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*Hunter, Edith F. Child of the Silent Night: The Story of Laura Bridgman, Boston: Houghton Mifflin Co., 1963, ($3.95).

Marlowe, Stephen. *Colossus: A Novel about Goya,* New York: Macmillan Co., 1972, ($6.95).

Ludwig, Emil. *Beethoven: Life of A Conqueror,* New York: G. P. Putnam's Sons, 1943, ($4.00).

*Shippen, Katherine B. *Mr. Bell Invents the Telephone,* New York: Random House, Landmark Book, 1958 (Mabel Hubbard, his wife, was totally deaf).

Powers, Helen. *Signs of Silence: Bernard Bragg and the National Theatre of the Deaf,* New York: Dodd, Mead & Co., 1972, ($6.95).

*Woods, Willard H. *The Forgotten People* (includes biographies of Beethoven, Edison, Thomas Marr, and Robert Gregg), St. Petersburg, Fla: Dixie Press, 1973; also available from National Ass'n. of the Deaf, Wash., D.C., ($6.50).

III. Magazine Articles (Non-fiction)

A. THE ARTS AND SCIENCES

Arnold, N. Hillis. A deaf sculptor, *The Volta Rev.*, June ,1967.

Deaf-blind man named handicapped American of the year (Robert J. Smithdas), *The Volta Rev.*, May, 1966.

Domich, Harold J. John Carlin, *Amer. Ann. Deaf,* Sept., 1945.

Kowalewski, Felix. The deaf in art, *The Silent Worker*, Oct., 1954.

Kowalewski, Felix. Hillis Arnold: American deaf sculptor, *The Deaf Amer.*, Nov., 1972.

Panara, Robert F. The deaf writer in America, *Amer. Ann. Deaf,* Sept. & Nov., 1970.

Runde, Winfield S. Douglas Tilden: sculptor, *The Silent Worker,* Dec., 1952.

Simon, Arthur B. Call him John, Please (A biographical sketch of the deaf artist, Jean Haneau), *Volta Rev.*, Jan., 1949.

Wright, David. A deaf man goes to France (odyssey of the deaf poet, David Wright), *The Volta Rev.*, Sept., 1949.

B. PROFESSIONAL SPORTS

*Kruger, Art. William E. Hoy: pro baseball star, *The Silent Worker,* July 1952.

*McCarthy, Samuel. Dummy Decker: deaf ring great (Professional prize-fighter), *The Silent Worker*, Apr., 1952.

*Warshawski, Leonard. The Taylor-made story (Dummy Taylor, pro baseball pitcher), *The Silent Worker*, Sept., 1952.

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REHABILITATION AND THE POST-SECONDARY DEAF CLIENT

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"Discontent" said Oscar Wilde "is the first step in the progress of a man or nation." If so, the current disenchantment with the present system of providing for the educational, vocational, and social needs of the deaf and hard of hearing will bring about the needed changes that will benefit this long ignored minority group. If there were no discontent, there would have been no impetus to create special organizations such as: the Professional Workers with the Adult Deaf, the Council of Organizations Serving the Deaf, and the Council of Coordinators of State VR Services to the Deaf, or to hold conferences throughout the country such as: the National Conference for Coordinating Rehabilitation and Education Services for the Deaf, the Tarrytown Conference on Current Priorities in the Rehabilitation of Deaf People, and the regional Tripod meetings. As long as this discontent with the present service delivery system exists, we will continue to have conferences and meetings to seek new and better ways of assisting the deaf and hard of hearing in "living" rather than "existing" in today's society. As you are aware, this conference is not a "wrap-up"; rather, it is an attempt to "gear up" our resources so that goals, processes, and agreements can be further extended to fulfill the "human needs" of our hearing impaired population. Evaluation of our service delivery systems is more effective when new perceptions of goals or purposes emerge.

It appears to me that we have the tendency to become wrapped up in programs, service delivery systems, and other approaches in our attempts to solve the social, educational, and vocational problems of the deaf. In other words, we are so wrapped up in what we are trying to do that we forget the most important thing of all—the deaf client. The tremendous potential of deaf people is our most valuable resource, and it must be nurtured and developed by other people. Yet, the institutions and programs that we have created have by necessity become computerized, professionalized, prepackaged, and programmed in order that they may preserve, educate and restore thousands of deaf people whose basic problem is a lack of the ability to understand, live, and work in society. In this age of "future shock" in which the threat to purposeful living is faced by all men, it is imperative that Vocational Rehabilitation *concentrate not only on the vocational needs of the deaf client*, but also on his ability to lead a constructive, productive life.

I would like to read to you a poem by Dr. A. Frederick Whitehouse that appeared in the November–December, 1963, issue of the *Journal of Rehabilitation* in an article titled "Living a Useful and Meaningful Life After A Stroke."

Not to function is to die;
  Not to exercise facilities causes deterioration;
Not to be physically active brings atrophy;
  Not to be mentally active leads to breakdown and fantasy.
Not to have purpose generates despair;
  Not to be in emotional contact with others and the external world
    encourages retreat.
Not to be useful leads to self abasement and unhappiness.

Although these words were intended to describe the necessity of considering the psychological or emotional factors in the rehabilitation of the stroke patient, they, nevertheless point out that providing services aimed at developing only vocational skills in deaf people is not enough. How many times have we seen a deaf or hard of hearing person with sophisticated training, fail in his work? Many of these failures are due not to lack of proper training, but to the inability to manipulate the environment after working hours to meet "living" or human needs. In other words, many of these people need to develop their "manipulative skills" for meeting their "living needs", not just their vocational needs. What happens to the deaf person after working hours has proven to be a major factor in his ability to perform his work satisfactorily. For this reason, Rehabilitation must apply itself to meeting *all of the needs* of the deaf person. This concept should be emphasized in evaluating the effectiveness of rehabilitation programs for the deaf and hard of hearing.

Vocational Rehabilitation often follows the philosophy—"Give a man a fish and feed him a meal; teach a man to fish and you feed him for a lifetime." A flaw in this approach is that it *concentrates on satisfying only one primary need*, the need for productive living. It does not necessarily address itself to meeting other physical needs, safety needs, and psychological needs such as the need for self-actualization or becoming all that one is capable of becoming. This may explain why vocational rehabilitation has not been successful in rehabilitating some deaf individuals who have the *potential* to become employed and self-actualizing members of society.

Whether we like it or not, there is a trend to de-emphasizing institutional settings in solving the problems of the deaf, the retarded, the mentally ill, and the other handicapped segments of society. The Director of Planning of mental health programs in this State is planning to phase out in 10 years all state mental health hospitals with the exception of one hospital for those mentally ill who have been convicted of serious crimes. The State of Indiana has passed an act requiring the provision of Special Education Services for all handicapped children, including deaf children in public schools. Similar incidents are taking place or being contemplated by legislative bodies across the nation. We all know that the growing public dissatisfaction with these institutions and social service programs is largely due to the fact that we have not been completely successful in providing effective therapeutic or remedial help to those who need it the most. It is not the purpose of this presentation to dwell over all of the possible factors that have caused this negative shift in public confidence in our ability to solve the *problems* of the handicapped. However, this might have been avoided if we had concentrated more on meeting the *needs* of the individual rather than on the *problems* of the individual. We have the tendency to concentrate on one specific problem such as emotional problems, personal adjustment problems, and vocational problems. When we do this, we are looking at the person in terms of his problems, rather than considering *all of his needs*. An example of this is the committing of a person to a state hospital where the emphasis is on providing therapy to alleviate his emotional or psychiatric problem.

Focusing on his problem tends to cause his other needs to be disregarded during confinement. As a result, the coping or manipulative skills that he had before admission to the hospital are replaced by dependency on the hospital for meeting his needs. During long term confinement, he continues to lose his capacity to utilize his coping or manipulative skills from lack of opportunity to use them. When he is discharged after being considered "rehabilitated", he faces a new crisis in regaining his capacity to function effectively in society. A halfway house may be needed in order to assist him in regaining his lost coping or manipulative skills. This is the reason for the new emphasis on developing community mental health centers where therapy can be provided on an out-patient basis so that patients are not taken out of their natural environments and put into restrictive environments, which foster dependency. In other words, by ignoring a client's other needs, we create a situation where additional services are needed *because we may not consider the total person, but instead, are concentrating only on one of his specific problems*. The implications are clear. If we are to stem the tide of public disenchantment with the services offered by state vocational rehabilitation agencies, state residential schools for the deaf, community agency programs for the deaf, and other public and private institutions providing services to the handicapped, we must change *our attitudes*, *our staff perceptions* and our priorities in order to serve the deaf and hard of hearing effectively.

Because of the lack of uniformity in the quality and quantity of rehabilitation services for the deaf among state VR agencies, the

Federal government is now requiring that information about VR Programs for the deaf be more *specific* about the type and quality of services provided to the deaf population. As a result, the emphasis is now on developing statewide planning programs for the deaf in order to make the state VR agencies *more responsive* to the *needs* of the deaf and hard of hearing. Most state VR agencies are experiencing difficulties in identifying needs, establishing priorities, and concentrating on programs and resources to achieve maximum impact through planning and evaluation activities. The reasons for this are: (1) the lack of high priority of services to deaf people by the Social and Rehabilitation Service of the Rehabilitation Services Administration; (2) the lack of understanding of the unique problems of deafness by state VR and other social service agency administrators; and (3) the lack of specific program guidlines or state plan requirements by the RSA; and (4) the competition with other programs such as those for the public assistance recipients, drug and alcohol abusers, public offenders, mentally retarded, and mentally ill. Most state VR agencies do not have funds available to establish permanent program planning and evaluation components. Other State and Federal agencies have better opportunities to obtain financial assistance for undertaking statewide planning programs, for example, state education agencies can utilize Title IV of the Elementary and Secondary Education Act (Public Law 90–247) which provides up to $100,000 to *each* state education agency to establish a permanent program planning and evaluation component. State VR agencies do not have this sort of financial assistance for program planning purposes, and if any such projects are undertaken, the cost must be met by the already limited allocation of funds that each state has available for the provision of rehabilitation services for all handicapped clients.

This presentation is supposed to focus on the rehabilitation of the post-secondary client, so let us now shift our attention to what has been done thus far and to the kind of deaf client that we have been serving.

Rehabilitation counselors have been providing services to three broad categories of hearing impaired clients. The first category is the top achiever client which makes up 5–10% of the population of hearing impaired clients. They have been able to develop language skills well enough to master the academic requirements of colleges, and technical schools. The second category is the middle achiever client who has graduated from a state residential school with a vocational diploma or in some cases, an academic diploma, but whose language development has not progressed enough for him to function effectively in institutions of higher learning. Approximately 40–50% of the deaf population will fall into this category. The third category which includes 30–40% of the deaf population, is composed of underachievers whose language development is such that a whole range of services is needed before they can become a contributing member of society.

We all know that the greatest amount of rehabilitation services has been directed towards those deaf and severly hard of hearing clients that come under the first category—the top achiever. Note the tremendous proliferation of post-secondary programs for deaf students. As of today, there are 27 colleges throughout the country with deaf student populations varying from 942 to just 4 students. This is a phenomenal number considering that only 6–8 post-secondary programs for the deaf existed prior to 1964. They have opened up many new opportunities for the deaf top achiever; however, providing opportunities to develop vocational or career skills is not enough. We need to develop other skills in the top achiever so that he may become more responsive to the community at large, especially to the deaf community. We all know that many deaf top achievers do not provide leadership and other needed services to the deaf community when completing their college training programs. These deaf college and technical school graduates usually remain by themselves and mingle only with other deaf people who have completed college.

The deaf community needs their leadership and their higher level of awareness to assist it in overcoming obstacles that prevent its needs from being met. In fact, the editorial page of the latest issue of *The Deaf American* laments that capable and talented deaf people are not as *involved* as they should be in the variety of endeavors. The comments were made that too often a few deaf leaders have more than they can handle, that they are often overburdened in spite of the large number of *talented* deaf individuals available at all levels and that "we have too many overworked people who readily admit that they need help." In other words, other rehabilitation programs have helped them to develop productive living skills involving vocations, work, the sale of skills and labor, and the means by which we measure our values and degree of successful living, but not to lead lives that are directed towards helping other deaf people. We have been more concerned with the development of productive living skills and have not really attempted to develop *contributive living skills*. Contributive living involves giving to others, and it permits the deaf person to say "others depend on me". Responsible activities are necessary if the deaf family or deaf community is to function effectively. We have seen too many of them lead lives of non-involvement because they lack purpose, awareness, and direction in their lives. These talented deaf people are our most valuable resources. Yet, what have we done to nuture, encourage, and develop contributive living skills among them? I am sorry to say that we have done very little. Like it or not, we are turning out talented deaf individuals who are only half-way ready to make real commitments to alleviating the problems of others who are not fortunate enough to be as talented as they are.

There are many deaf leaders who protest that what they do is often unappreciated by the deaf community and that they often get complaints, and verbal abuse from the very people they are trying to help. No wonder many deaf leaders, having tried once to make life more meaningful and rewarding for others and getting burned in the process, are often reluctant to commit themselves further, and as a result, deny the deaf community the guidance, help and leadership that it sorely needs. These negative encounters often cause the talented deaf individuals to develop a lack of purpose, to retreat from any further emotional contact with their less talented brethren, and to develop feelings of uselessness and alientation from the deaf community.

Rehabilitation has made the greatest advances in the development of *vocational or productive living skills*, but has ignored the need to develop *contributory* living skills in its clients. Too often we assume that the vocational, educational, and social institutions can solve the problems of the deaf community. We tend to forget that rehabilitation is more than physical restoration, counseling, guidance, training and placement. Rehabilitation means developing the *will* to become a useful member of the deaf community and of society. Without adequate training in developing contributory living skills, a client cannot be motivated to develop the sense of awareness, involvement, and leadership that makes contributive living meaningful.

Providing leadership and assistance in every conceivable area in which the deaf are interested requires a two-way interaction between the deaf leaders and the deaf community. This cannot be a one way street. The overworked deaf leaders cannot be expected to provide some form of assistance within a reasonable period of time without help and encouragement from the deaf community, and the professionals and institutions providing services to the deaf. We must do away with all too prevalent philosophy of "Let George do it", otherwise bickering and backsliding in the deaf community will only continue to its detriment. After all, progress doesn't just happen. *It takes teamwork.*

How then, can rehabilitation help to alleviate the problem of developing contributory living skills in the deaf top achievers? For one thing, it can help establish leadership training programs that train talented deaf individuals to become more involved with community affairs. For example, rehabilitation counselors could, with the assistance of the deaf community, help establish civic clubs, such as Lions International, that are oriented towards providing services to the community. Two Lions clubs composed of deaf people have just recently been established in Texas and other similar clubs are being considered in other parts of the country. This would be an excellent way to get the deaf community involved with community affairs and educate the public on what the deaf can do. The activities and achievements of such groups are bound to be noticed by potential employers of the deaf. The talented deaf leaders, through the activities of such organizations, can develop their own sense of purpose and usefulness. Examples of projects that could be undertaken by such groups are: installation and publicization of public phones with amplifiers, the dispensing of specific information on the use of TTY machines, doorbell flasher lights, and special transportation arrangements of the handicapped deaf, the provision of interpreters for the deaf at all open meetings involving community affairs, and the establishment of other programs to meet the needs of the deaf community. The groups could function in the same manner as the Sertomas, who aid the retarded, and the Shriners, who aid the blind.

In summary, rehabilitation has made tremendous progress in developing and opening up opportunities for the top achieving deaf individual. The time has come for us to determine whether the programs we have set up for them are preparing them to provide leadership and other needed services to the deaf community. Hearing doctors, educators, social workers and rehabilitation personnel cannot provide leadership for deaf people. The best leadership of a group is that which comes from within the group. This is why we need to seek ways to encourage talented deaf individuals to provide opportunities where other deaf can develop a greater awareness of how they can help each other, develop a desire to become involved with the problems of the deaf community, and learn to provide leadership where leadership is sorely needed.

Up to now, most of the rehabilitation effort has been directed towards providing services to the more talented deaf top-achiever. Rehabilitation has only recently started concentrating on the middle achiever post-secondary student. The delay is unfortunate because they are the largest group having the *potential* for leading useful and rewarding lives. I am not talking about the underachievers, who include about a third of the deaf population, because they are, for the most part, functionally illiterate; hence, they would not qualify for most post-secondary programs now available to the deaf. The middle achiever deaf client has presented one of the most difficult dilemmas in vocational rehabilitation's attempt to provide services to the deaf. The dilemma is that we have the tendency to spend most of our time and effort *evaluating* these people. We evaluate them in terms of language proficiency and level of communication, the kinds and levels of functional skills they may possess, the ability to socialize and relate to others, and the coping and manipulating skills needed for them to function effectively in this highly complex society of ours. In other words, rehabilitation has the tendency to overevaluate to the point of *forgetting or ignoring the client's other needs.* For one thing, *many middle achiever deaf individuals are not motivated for additional academic or vocational training when they leave school.* They have been in school for many years and want to "test their wings" and sense their new feelings of freedom and of being their own masters for a change. It makes no difference if they are ready to take the plunge or not because their primary need at this time is to find out who they are and how they may contribute to what appears to be a friendly and safe world. They need to learn to identify to their work, their friends, and specific groups of people (I am thinking here in terms of ethnic groups), and most of all, to develop a sense of belonging and worth. This is the time when the greatest amount of personal growth takes place. For many deaf people, this period in their lives is the most critical. Their attitudes and perceptions will be greatly influenced by what happens to them during the first year or two after leaving school. This is where capable deaf leaders *who care* can make their greatest contribution to others through civic clubs and other deaf organizations that can help the deaf youths make a smoother transition from a sheltered school environment to a highly competitive world. By providing examples of constructive and contributive living, deaf leaders can serve as models which a young deaf middle achiever graduate can emulate and thus, in turn, join the growing elite of deaf people who care about what happens to others.

One of the points that was brought up at a regional TRIPOD meeting, was the lack of models for the deaf youngster to emulate. Most teenagers have idols or models with whom they identify, whether we approve of these models or not. At least, they have someone with whom they can relate to and can feel a sense of kinship with others who have the same idol. What opportunity is there for the deaf youngster to obtain a model with which he can identify? He has very little opportunity and, in fact, many deaf youngsters do not have any models. They do not identify with hearing models because their deafness makes them too different from the models. This is why the deaf should lead the deaf.

Let us go back to the time when the middle achiever client leaves school. What usually happens then? Ideally, this is a time of smooth adjustment and assimilation into society, but, unfortunately, this is often not the case. It is usually a time of crisis and "future shock" when considerable personal adjustment is required for coping with the outside world. This period of time probably contributes to a large extent, to the negative attitudes and feelings of persecution among a large number of deaf people. What can vocational rehabilitation do to prevent this sort of thing from happening? We have to respect the clients' primary need to "test their wings" and to be their own masters. We have been evaluating them for the purpose of directing them into a variety of training programs and projects regardless of their needs or levels of motivation. As a result, many of them fail or drop out in spite of all our efforts and good intentions.

Whether we realize it or not, most of our services to the young deaf school graduates provide the maximum protection and the minimum risk of encountering negative work or living experiences on the assumption that they have experienced nothing but negative experiences up to this point. Thus, we are denying the right of the deaf individual to experience the taking of risks which is necessary for normal human growth and development. The world we live in is not always safe, secure and predictable. There are times when we find ourselves in a situation where we have to risk our jobs, our homes and even our lives. This is reality. We must work to develop every human resource in our deaf clients in order to prepare them for challenging situations. To deny any deaf or hard of hearing person his share of risk experience is to further cripple him.

There is a message here for rehabilitation. We must change our perceptions, and approaches in serving the needs of the middle achiever deaf client. Instead of evaluating a client in regards to his readiness for competitive employment or for coping with non-job related responsibilities, we could place him directly into an appropriate job that interests him. By being exposed to the demands of that particular job, *he will find out more about himself* in terms of his tolerance for repetitious tasks, his ability to comprehend verbal or written instructions, and his ability to socialize and integrate with hearing co-workers. Although these traits can be observed and evaluated in a rehabilitation center or workshop, nothing can take place of actual working conditions in bringing him to realize that further training is needed if he does not desire to remain in a boring, restrictive, and dead-end job. Once the deaf client realizes that additional academic or vocational training is needed, he will be much better motivated and better able to relate to the post-secondary courses that will be required of him. You say that's too risky? The present practice of putting a client fresh out of school into a post-secondary institution *when he doesn't know himself yet or even know for sure that the type of work he will be doing after completing his training is what he really wants to do is just as risky.* A lot of public tax money has gone down the drain in providing training for deaf individuals who later on decide that they are not cut out for the type of job they were thinking of entering or that the training they are getting will not provide the employment opportunities that they previously expected. A gamble is involved whether we provide work experience first or provide post-secondary training first. This is why there is a need for vocational rehabilitation to develop opportunities for the deaf middle achiever client to become more "seasoned", mature and knowledgeable in regards to who he is and what he wants to do before undertaking any further academic or vocational training. This means that rehabilitation will have to shift its emphasis from providing training to providing employment opportunities that enable the deaf client to "find" himself, develop more positive attitudes and acquire the motivation for additional training beyond the high school level.

Some of you are thinking, "Where are you going to find jobs for those deaf individuals who are 'half-prepared' for competitive employment"? Undoubtedly the rehabilitation counselor will have to do more placement work than he is doing now. The question should be: "Are there jobs available that deaf school graduates can handle until they have matured enough to take post-secondary training programs seriously." Yes, there are jobs available, but the problem is employer resistance to hiring the handicapped. The U.S. Department of Labor did a study in 1970 on industry hiring standards and job performance. The study demonstrated "that the vast majority of firms did not possess job descriptions for key occupations at low skill levels. In all occupational groups studied, there was an absence of written hiring standards which made the hiring process highly personalized and involving the individual judgment of one or more personnel specialists who may or may not have been relating an applicant's credentials to the job tasks". Another interesting variable brought out by the study was that about one-half of the industry hiring personnel believed the ability to read and write English to be important for job success; yet about three-fourths refused to hire workers who could not properly fill out the application form. If the deaf clients are given the opportunity to practice filling out application forms, this would not be an insurmountable problem. The study also demonstrated that little or no difference in job performance in many occupations could be attributed to *differences in education* which refutes the thesis of many employers that the more education an applicant possesses, the better worker he is likely to be. Therefore, the placement counselor should point out that overstated hiring standards in terms of job performance impose two unnecessary costs on employers. First, overqualified workers are screened which contributes to costly turnover. Second, qualified workers are screened out, increasing recruitment and related costs. This is an example of one approach in persuading the employer to consider hiring a qualified deaf worker.

Up to now, I have been emphasizing the necessity for providing rehabilitation services that help prepare the post-secondary student for living constructive and contributive lives beyond bringing home the bacon. In making these points, I have left out one very important source of influence and assistance that often determines whether the transition from a student to an adult member of society is difficult or smooth. That source is the *parent* of a deaf son or daughter.

Parents contribute enormously to the attitudes, perceptions, and level of coping and manipulative skills that their deaf or hard of hearing children may have. The opportunity for developing functional and manipulative skills is much greater in the home than in the school, especially from the standpoint of partaking in responsible and risk-taking activities. The greatest amount of practical learning takes place when the child is given the opportunity to *experience* those activities that are necessary to function effectively in society. This is why there is a shift in emphasis to making the parents responsible for providing those learning opportunities that the schools and other institutions cannot provide. The problem is that many parents don't know how to go about providing these opportunities or are unaware of the importance of providing these opportunities. This is where vocational rehabilitation can be of assistance. Rehabilitation counselors working with the deaf should be able to assist these parents in obtaining the information, insights, and perceptions needed for them to provide the necessary learning opportunities that are vital for growth and maturation. Most rehabilitation counselors for the deaf do not receive their deaf clients until they have left or graduated from school. When this happens, it is usually too late for parent counseling to be effective. Since vocational rehabilitation can provide services to other members of a handicapped individual's family, counseling and guidance programs could be established to assist parents. This way, rehabilitation would be providing a needed service and, at the same time, offering preventive rehabilitation before serious family crises occur. This would also permit the rehabilitation counselor more time to provide for positive and constructive learning situations that create healthy attitudes and perceptions in the deaf client. We can no longer afford to wait until the damage has been done through ignorance and lack of commitment to meet the needs of others.

The past few years have seen the growth in emphasis on *accountability* for all service delivery systems for the handicapped that are supported by the American tax dollar. Few people seem to like this, yet professionalism decrees that we stop occasionally to assess our efforts and determine whether there have been changes in attitudes and approaches in meeting the needs of the deaf, and whether new programs are meeting the expressed need of deaf individuals to lead not only productive, but also to contributive lives.

STUDENT MANAGEMENT AT THE MODEL SECONDARY SCHOOL FOR THE DEAF

Don G. Pettingill, Model Secondary School for the Deaf, Washington, D.C.

The Model Secondary School for the Deaf is a rather new and innovative concept of educating hearing impaired high school age youngsters. It is both a day and a residential school, with most of its students coming from the five neigboring states and the District of Columbia. Thus the basic problems of student management as described by Dr. McClure and Dr. Tillinghast are similar to those of MSSD.

Because of the experimental nature of our school, this paper might more appropriately be called "Lack of Student Management." In other words, it might be said the MSSD students and staff will try just about any new idea as long as it is felt it will add to the overall growth, independence, individuality and maturity of the students.

It has been quite an experience for all of us . . . this open school system, this school of much freedom and initiative.

My own personal philosophy of MSSD and its raison d'etre is that it represents Goethe's self-fulfilling prophecy: "Treat a person like he ought to be and he will become what he is fully capable of being."

It is never an easy task to start a new school. It is even more challenging to establish a model high school with both students and staff coming from other schools with a wide variety of student management programs.

At the MSSD rules are deliberately kept at a minimum. Rather than rules, which imply what a person cannot do, there are a good many guidelines stressing positive action. Through individual scheduling via the modular system, each student has a specific and rather full schedule. Operating in this manner requires more of the staff in the way of planning and in being available to students.

It is a gratifying experience to watch 14-year-old deaf high school students rapidly grow in maturity, cooperation, initiative and responsibility when placed "on their own" with, of course, an advisor who is constantly available, and school counselors to whom they can go when they feel the need.

THE CONCEPT OF OFF-CAMPUS STUDY AT MSSD

Off-Campus Study recognizes and strives to remedy the immaturity and naiveté of our hearing impaired students. Too many have reached the age of 13 or over without ever having heard their fathers discuss their jobs, employers and fellow employees, and are unaware of the normal problems involved. They are hardly aware, either, of other day to day joys and sorrows of living and making a living. Thus, the thrust of Off-Campus Study is toward helping him realize his potential and providing him with proper attitude and motivational tools plus the understanding and maturity he will need to *keep* a job *after* he is trained for and finds one.

Above all, full communication and understanding between instructor and student and between students is fostered at all times. This builds mutual respect and trust and reduces the need for "management."

Programs are being developed and actively implemented to fill in such ordinary but vital gaps in students' total growth. The four main phases are: 1) awareness of self and others; 2) exploring of and exposure to the real world of work; 3) community involvement and general work sampling; and 4) specialization in vocations of their choice. Career development through off-campus programs is emphasized throughout the students' involvement in this phase of MSSD.

Summary

The challenge of Off-Campus Study is to prepare students to assume and adequately *COPE* with their rightful places in the real world with the least possible amount of turbulence and frustration during the transition from family and school to first class citizenship. Training, counseling and employment which prepare them to enter post-secondary education, training or employment, ready and willing to settle down and make the most of their opportunities, are of prime importance.

If secondary education programs for the deaf are successful in realizing these basic objectives, then more of the limited time and energies of rehabilitation counselors and post-secondary programs can be concentrated toward doing their primary job: providing the most profitable higher education and/or training with a minimum of "student management" before actual education begins.

PROJECT LIFE—LANGUAGE IMPROVEMENT TO FACILITATE EDUCATION: A MULTIMEDIA INSTRUCTIONAL SYSTEM FOR THE DEAF CHILD

Glenn S. Pfau, Ph. D., Director of Project LIFE, National Foundation for the Improvement of Education, Washington, D.C.

Language, in its most pedestrian sense, is an acquired cultural tool that facilitates the communication of man's personal expressions. Notions of somewhat lesser currency view language as facilitating thought patterns by instilling an element of verbal structure into the cognitive processes. Whatever the notion subscribed to may be, language is in its final analysis a covariable to the acculturation process. Although there exist many other social, emotional and psychological factors contributing to this process, language, it appears, is the single most pervasive factor.

Critical to the development of the language process is the socially functioning sense of hearing. Whenever a handicapping condition such as severe auditory deprivation exists from early childhood, a pronounced retardation in the child's acquisition of expressive/receptive language abilities invariably results. This identification of one of the focal tragedies of deafness lends support for the truism that no responsible teacher of the hearing impaired child exists who is not at the same time a practitioner of the art of teaching grammar and meaning. The expressed need and challenge to be met by these teachers is (1) to increase the child's reading level so that it approximates more closely the level expected of the child's chronological age, and (2) to measurably improve the written language production of the child so that even the near limits of grammatical acceptability might hopefully be attained. That these hopes have not been realized for the majority of such hearing impaired children is supported by the relative profusion of comparative, cross-sectional and longitudinal research studies conducted over the past several decades on this topic of language deviance in this population of handicapped children.

Congressman Hugh L. Carey, addressing the 1967 National Conference on the Education of the Deaf, again pointed up this need when he stated, "It seems obvious that something should be done to determine if language can be assimilated through the utilization of the deaf child's other senses" (Education of the Deaf, 1967). Concomitant recommendations presented at the same Conference by members of the National Advisory Committee on Education of the Deaf (1967) were: (a) "The relationship between language input and language output should be studied more thoroughly . . . by exploring the roles of the other senses"; (b) ". . . research should be supported that investigates thinking in deaf children . . . so that educational techniques, stimulating the intellectual functioning of deaf children, be evaluated."

Because of the known need, Project LIFE—*L*anguage *I*mprovement to *F*acilitate *E*ducation—was created. Under the sponsorship of Media Services and Captioned Films (Contract No. OEC–0–73–0608), Bureau of Education for the Handicapped, U.S. Office of Education, Project LIFE is administered by the National Foundation for the Improvement of Education (NFIE) and located at the National Education Association's headquarters in Washington, D.C.

NFIE, the recently formed nonprofit foundation of the National Education Association, administers contractual projects engaged in the development, testing, and applied validation of educational media programs.

Since the Project's original funding in 1963, it has produced 30 programmed filmstrips in visual perception, 102 filmstrips in thinking activities, and over 250 filmstrips in programmed language/reading. All such materials are aimed at improving the receptive language skills of hearing impaired children. LIFE has projected for development over the next 24–48 months (a) an additional 200 filmstrips of programmed language, (b) specific subject-matter programs in language arts, science and social studies, (c) a teaching manual outlining content, scope, recommended utilization procedures, and alternate utilization procedures, and (d) numerous workbooks, story booklets, flash cards, spirit-master manuals, single concept dictionaries, and other instructional materials to supplement the programmed filmstrips.

The dominating and long-range objective of the Project is to foster the growth of receptive language abilities in hearing impaired children so that their reading achievement surpasses the presently acknowledged "fourth grade plateau" at the secondary school level. Of lesser priority, but of substantial concern to the Project, is the intermediate objective of determining the effectiveness of these materials on children with handicaps other than hearing impairment.

PROGRAM CONTENT

Project LIFE, on the basis of its early field testing evaluations, quickly realized that the development of language programs alone would be inadequate for the full realization of the Project's goals. Consequently, a series of visual perceptual filmstrips were developed to teach the pre-skills necessary in order for the child to experience success in the language programs. This effort further resulted in incorporating within the system a thinking activity series, as based on the works of Guilford (1966) and Meeker (1969), and paralleling the cognitive and behavioral demands subsumed in the language programs.

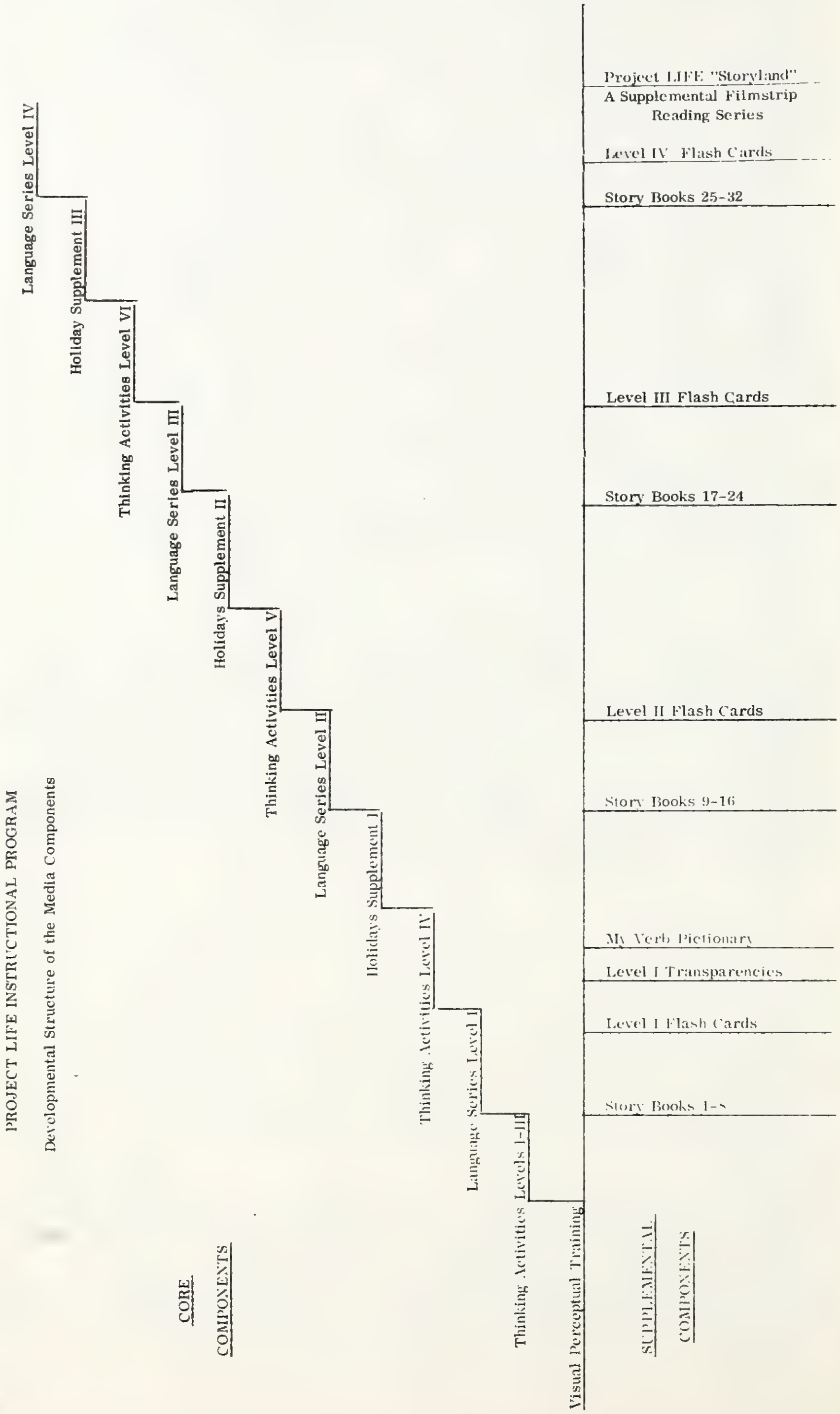
One's reading ability is closely related to perceptual deficiency (Coleman, 1953; Bryant, 1964; Wepman, 1962; Shea, 1968); and, perceptual efficiency is developed through perceptual experience (Tinker, 1965; Cleland, 1966). Therefore, one goal of a reading based language program must be perceptual development. The teaching of visual perception is not an isolated process. On the contrary, there is an interdependence on language and cognition (Piaget, 1952; Harrington, 1964; Robertson, 1967; Frostig, 1968). Hence, perceptual training and thinking activity programs should be incorporated into an instructional language program, if it is truly to be considered a complete system.

The LIFE visual perception series is based upon more than 100 references (Pfau, 1972) related to perceptual development and reading disabilities. The structure of the perceptual process is dichotomized into two tasks—discrimination and association. Each task area is divided into five skill areas: (1) visual properties—size, shape, and color; (2) additions-omissions; (3) position in space—inversions and reversals; (4) spatial relations—distance and placement; and (5) figure-ground. Each filmstrip emphasizes only one task and one skill area. Within each filmstrip, a child is progressively taken through the concepts of pictures, geometric forms, word configurations, letters, and words. In the discrimination task, the child chooses the one item from four which is different from the other three. In the association task, the child must choose the one picture from four choices which is identical to a given stimulus visual.

A great deal has been written about human intellect, and the manner in which children think and learn. Possibly, the most complete model has been postulated by J. P. Guilford—*The Nature of Human Intelligence* (1967). After careful consideration of various models, Project LIFE selected the Guilford model as most appropriate on which to build a framework for cognitive material development. The model includes three basic areas—operation, products, and content. The operation area is subdivided into evaluation, memory, cognition, convergent production, and divergent production. The products area includes units, classes, relations, systems, transformations, and implications. The content area is divided into figural, symbolic, semantic, and behavioral categories. The 102 Project LIFE thinking activity filmstrips are concerned with given specific cells in the three-dimensional factor-analytic Structure of Intelligence (SOI) cube (Meeker, 1969).

The core of the LIFE instructional system is programmed language-reading lessons. The primary goal for each child is the acquisition of a functional receptive language system. Beginning programs are built around basic vocabulary and sentence structures that the child needs. The language filmstrips are organized into hierarchical sets, progressing from simple to complex. An ever expanding functional vocabulary is programmed in a linguistic milieu, beginning with very simple sentence patterns and spiraling upward to include more sophisticated language structures. The language units focus on a general topical theme, with the first units being self, animals, food, play things, activities, clothing, and shelter. The theme of later units includes history, travel, and pollution control. The sequential and developmental hierarchy is provided in Fig. 1.

FIGURE 1



PROJECT LIFE INSTRUCTIONAL PROGRAM

Developmental Structure of the Media Components

PROGRAM CONTINUITY

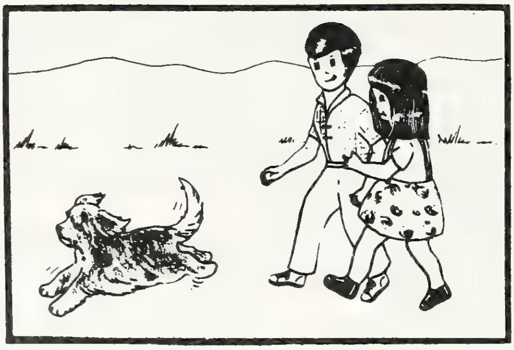
Though the Project LIFE instructional system may be used in a remedial manner, it is primarily designed as a developmental program. As indicated in Fig. 1, the developmental sequencing begins with the visual perceptual training materials and progresses through the first half of the thinking activity series and then into the beginning language materials. Each filmstrip provides the conceptual base and framework on which the major pedagogic concepts for subsequent filmstrips are based. Similarly, each set provides the conceptual framework for those sets in the system which follow.

All instructional areas of the LIFE system are designed and developed with stated purposes and behavorial objectives. A test filmstrip, provided with each set, is designed to measure the degree to which the behavioral objectives are met. The test can be used as a pretest (diagnostic), post-test, or for review purposes. If used as a pretest, it allows the student to by-pass information already in his repertoire.

The programmed language/reading series has eight sets in Level I, or a total of 55 filmstrips. Levels II and III (Sets 9–24) have 59 filmstrips each, comprising a total of 16 sets. Every language set also has a story ("fun") supplement that reinforces and extends the language and linguistic concepts in that particular set in an enjoyable story sequence.

It is difficult to pictorially illustrate varying levels of language complexity by individual frames. However, an attempt is made to do so in Figs. 2–4. Fig. 2 is selected from an elementary language filmstrip, Fig. 3 from an intermediate level, and Fig. 4 from a more advanced level. Though it may not be readily apparent in the three figures, the illustrations become more sophisticated, as do the vocabulary and language structure.

FIGURE 2



The boy and the girl are walking.

__________ is running.

Their dog ☐

They dog ✚

They ○

FIGURE 3

Miss Afghan said, "____________________."

Cut out your picture ✚

Cutting out your picture ○

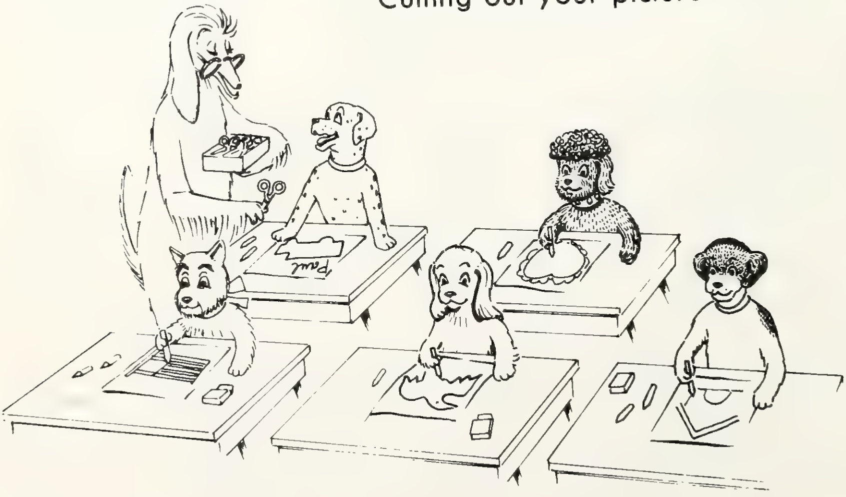
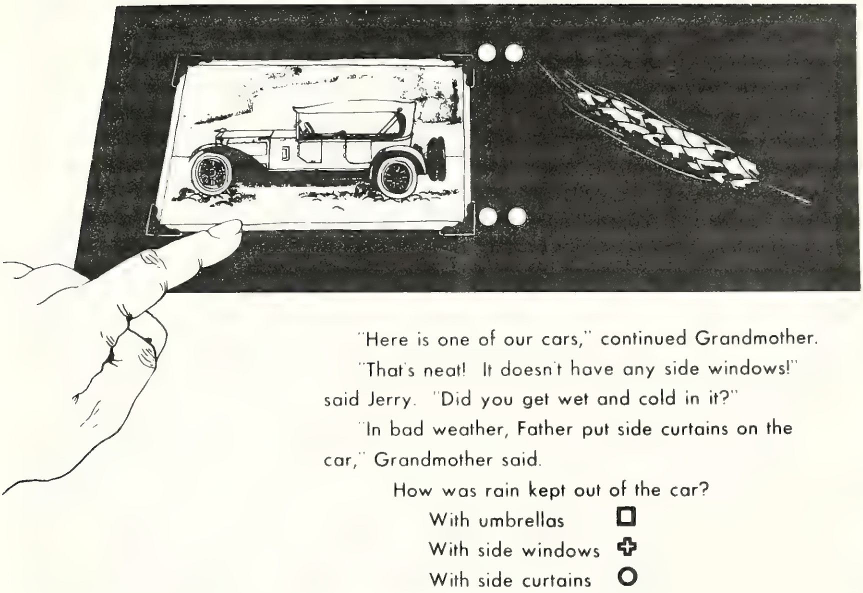


FIGURE 4



"Here is one of our cars," continued Grandmother.

"That's neat! It doesn't have any side windows!" said Jerry. "Did you get wet and cold in it?"

"In bad weather, Father put side curtains on the car," Grandmother said.

How was rain kept out of the car?

With umbrellas ☐

With side windows ✛

With side curtains ○

PROGRAM SUPPLEMENTATION

As indicated in Fig. 1, the Project LIFE instructional program has "core" components and "supplemental" components. The core components are comprised of programmed filmstrips in visual perception, thinking activities, and language/reading. Supplemental components include all other software developed by Project LIFE to complement, reinforce, or extend the instructional concepts presented in the core program.

Surveys and site visits are frequently made to the scores of institutions that are using the LIFE system to determine what supplemental components the teachers desire. The Project Research Department looks for trends or groupings in the teachers' requests. These requests are assessed and conveyed to the Project Systems Development Department. The latter Department designs, develops, tests, and modifie said requests for later inclusion into the LIFE system. Some of the supplemental components under development at the time of this writing include:

1. Story booklets (24) to accompany the first three levels of language/reading (one story booklet for each of the first 24 language/reading sets);
2. Single concept flash cards (375) to accompany the first three language levels;
3. A series of picture dictionaries organized by concepts to assist the child in finding verbal labels for known concepts. The first such dictionary is called *My Verb Pictionary;* other books projected for these series will relate to multiple meanings, people, animals, nature, homes, community and occupations;
4. Transparencies for language Level I;

5. Project LIFE "Storyland"—a supplemental filmstrip reading series. The series includes 24 filmstrips at the third–fourth grade reading level and includes accompanying worksheets;
6. A "language stimulation and divergent thinking series," which includes filmstrips, slides, and story booklets;
7. Spirit-master manuals; and
8. A comprehensive and functional teacher's guide for use in conjunction with the Project LIFE system.

PROGRAM EVALUATION AND VALIDATION

Project LIFE has approximately 150 units of hardware instrumentation (Student Response Program Masters) and no fewer than 40,000 units of software materials distributed among 52 functionally participating field test centers. The geographical dispersion of these centers comprises 26 federal states, territories, the District of Columbia, and a Canadian Province.

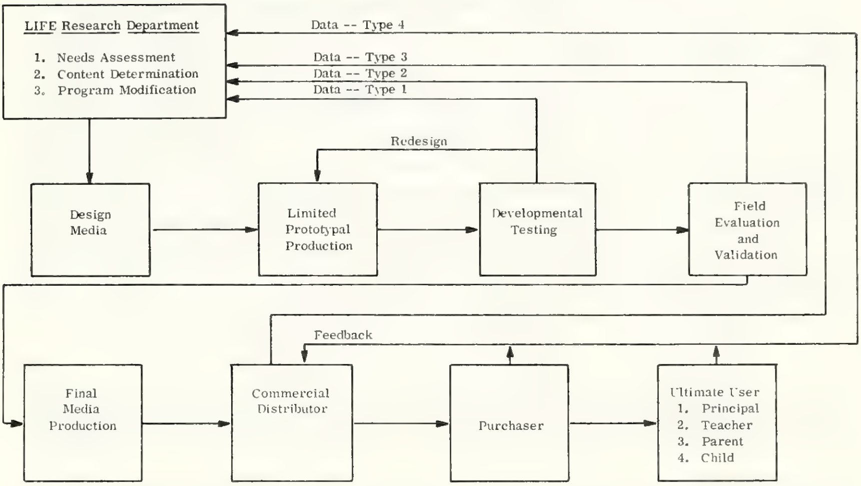
Based upon the return of a recent demographical questionnaire, it is factually known that the field test centers are housed in schools servicing slightly less than one-quarter of a million handicapped children. Of this handicapped population base, sixty-eight percent (68%) received direct instructional exposure to the Project LIFE system. The dominant handicapping condition of the children in the 52 schools is hearing impairment (82%). Eight percent of the additional cases are multi-handicapped and the remaining ten percent are distributed somewhat unevenly over the disabilities of the emotionally disturbed, mentally retarded, and learning disabled with less than one percent being used with orthopedic and neurologically impaired children. Approximately 92% of all subjects using the LIFE materials are at or below the upper elementary school grade level with 48% of the teachers reporting that the programmed packages constitute the core of their classroom instruction while 32% use the LIFE system primarily as supplemental instruction to their basic curriculum, or for remediation of specific academic deficiencies.

During each academic year, the LIFE Research Department accumulates validation data from the responses of over 1,500 students. The data assists Project LIFE in answering the questions: "Do the individual LIFE instructional programs accomplish their specified behavioral objectives?" "Which programs are weak and should be modified in order to accomplish their stated objectives?" "What content areas are weakest and in need of additional instructional supplementation?"

Fig. 5 shows the flow of material development and return data to the LIFE Research Department. It may be noted that the Research Department is responsible for assessing the needs, determining the appropriate content areas to satisfy said needs and, finally, to modify the instructional components until they meet acceptable performance criterion levels. Fig. 5 illustrates that data is returned to the Research Department from four sources—developmental testing, validation testing, the commercial distributor, and the ultimate user.

FIGURE 5

Project LIFE Diagram Showing Flow of Material Development and Return Data



The LIFE instructional materials are put through rigorous validation testing to gather data on the performance characteristics of the program as a whole. To the extent possible, validation testing is carried out on a population that is representative of the group for whom the program was intended. Since instructional materials are normally presented by the classroom teacher, the teacher (rather than the LIFE programmer) presents the program to the students just as if it were a normal part of academic instruction. Validation testing thus provides feedback under replicable conditions that demonstrate the program's inherent weaknesses and strengths. Some of the pertinent validation testing data include: (1) demographic data on each of the students involved, (2) indication of gain in students' achievement, (3) description of the instructional situation in which the program was used, and (4) time taken by the students to complete the program. Thorough validation testing goes far beyond the simple pretesting of the learners, giving them the program, and then post-testing the students. Though holding some credence, this is only one way to show that "the program did make a difference." For a more thorough review of developmental and validation procedures, the reader is referred to earlier articles by the author (Pfau, 1969, 1970a, 1970b, 1970c, 1972a).

PROGRAM DISSEMINATION

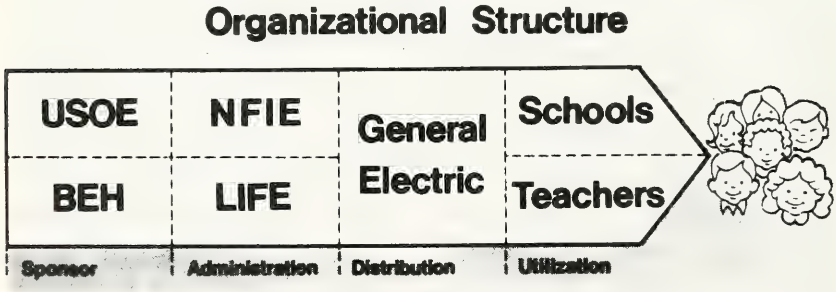
The National Foundation for the Improvement of Education and the U. S. Office of Education were faced with the crucial question of how to optimally disseminate the Project LIFE system. Some 15 dissemination alternatives were carefully analyzed and assessed. As a result of a study of the available alternatives and a marketing analysis, it was decided that the LIFE instructional system could best be disseminated by a commercial marketer.

On February 18, 1971, Project LIFE solicited proposals from prospective bidders to commercially distribute the LIFE system on an experimental basis to test the viability of the concept. The General Electric Company, through its Corporate Research and Development, was the successful bidder and, thus awarded exclusive distribution rights for a period beginning April 16, 1971 and extending through August 31, 1973.

On October 2, 1972, Project LIFE solicited proposals from publishers to commercially disseminate the LIFE system subsequent to September 1, 1973. Under the Copyright Program of the USOE, as set forth in its Copyright Guidelines dated May 9, 1970, Project LIFE was authorized to select a disseminator and enter into an agreement with that disseminator for the production, publication, and distribution of the LIFE materials. A total of 85 Requests for Proposals were sent out to prospective bidders by Project LIFE. The proposals submitted in response to the RFP were carefully assessed by a special *ad hoc* advisory committee comprised of five members independent of Project LIFE, USOE, and/or any interested commercial disseminator. The General Electric Company was selected as the successful bidder to commercially disseminate the Project LIFE materials on a world-wide basis beginning September 1, 1973, and extending through December 31, 1979.

In return for the exclusive dissemination rights, the General Electric Company will return a royalty to the National Foundation for the Improvement of Education and to the U.S. Office of Education.

FIGURE 6



The organizational structure is shown in Fig. 6. The primary strategy is the development of high interest instructional materials for language impaired children. It may be seen from Fig. 6 that Project LIFE is sponsored by the Bureau of Education for the Handicapped, USOE, is administered by the National Foundation for the Improvement of Education, and the materials are marketed by the General Electric Company. In essence, NFIE is the prime contractor to USOE for the development of the instructional system. NFIE in turn has an agreement with G.E. to disseminate both hardware and software. Though G.E. will continue to maintain the obligations associated with the NFIE agreement, it has entered into a subcontractor agreement with Instructional Industries, Inc., to carry out the major distribution aspects. For more information regarding the purchase or distribution of any aspect of the Project LIFE system—

either software or hardware—the reader may write: General Electric/Project LIFE Program, Instructional Industries, Inc., Executive Park, Ballston Lake, New York 12019. Instructional Industries, Inc., is an independent affiliate of the General Electric Company.

The dissemination agreement between the National Foundation for the Improvement of Education and the General Electric Company recognizes the expertise of each organization. That is, NFIE and the Project LIFE organization will continue to produce high quality instructional materials and thoroughly validate them on a recognized sampling of different target populations. The General Electric Company has agreed to provide system planning, production and distribution of filmstrips, a variety of supportive materials, reliable equipment to display filmstrips, and a comprehensive program encompassing all aspects of marketing, service, evaluation and support. G.E. has further agreed to support the Project LIFE language program and to promote its use as a highly regarded, comprehensive, learning system for children, adolescents, and adults.

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THE RELATIONSHIP OF PROGRAMS FOR MULTIPLY DISABLED DEAF CHILDREN TO TEACHER TRAINING PROGRAMS

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Introduction

Deaf children with additional disabilities have always been a concern to programs for hearing impaired pupils. In the past most of these children received instruction within the regular curriculum of a school if they received an education at all. The impetus and widespread concern for these pupils came about in the mid 1960's when federal monies became available to study the special learning and educational needs of this group of individuals. The major concern today continues to be in the educational arena with medical, psychological, and psychometric research making diligent effort to apply their findings to the classroom.

Since 1954 there has been a progressive increase in the number of hearing impaired children with additional dysfunctions (Weir, 1963). In 1970 the number of these children exceeded 8,000 (Rawlins and Gentile, 1970). The number of multiply disabled pupils is likely to show an increase for the foreseeable future (Vernon, 1969). However, it is not the intent of this report to completely review the issue, but rather to present some data on what is currently the status of various programs in the United States. In addition, information has been obtained from teachers of the deaf training programs to relate how they are contributing to the education of multiply disabled hearing impaired pupils.

A number of definitions have been proposed for children who have a hearing impairment plus an additional disability or disabilities. Since the pupils being referred to in this study are in school programs, the point of reference must be educational and hence any definition has to be on that basis. Furthermore, in this case, it is not necessary to question which of the disabilities is more severe. In this study, therefore, a multiply disabled hearing impaired child is one who a school program considers to have a hearing impairment significant enough to interfere with his language and speech development and who in addition has one or more other disabilities.

DESCRIPTION OF THE STUDY

The results reported in this study are based on questionnaires sent to programs for hearing impaired pupils and to teacher training centers. The material sent to 58 training centers requested information concerning courses beyond the regular certification pattern. It also requested whether students were given instruction in the use of various educational techniques.

Questionnaires were mailed to 96 day and residential programs that had 75 or more hearing impaired pupils. In addition these schools had to be offering a preschool through 12th grade curriculum as well as having a program for multiply disabled deaf pupils. The reference used in selecting the potential participants was the *American Annals of the Deaf—Directory of Services and Programs, 1972.*

RESULTS

On the basis of the procedures discussed, 96 questionnaires were mailed. Fifty-two were sent to day programs and 44 to residential schools. Returns included 28 from day programs and 26 from residential programs for a total of 54 returns or 56 percent. Eight of the schools indicated they did not have classes for multiply disabled pupils, however other parts of these questionnaires were usable. The 22 day schools that have day programs had a total of 69 classes for multiply disabled hearing impaired pupils, and 24 residential schools and a total of 124 classes. Not all schools had pupils in all areas of impairments and consequently the number of schools referred to in each division varies.

TABLE 1.—TYPES OF DISABILITIES REPRESENTED IN CLASSES FOR MULTIPLY DISABLED DEAF PUPILS

Disability	Day Schools reporting	Total pupils	Percent	Residential schools reporting	Total pupils	Percent
Vision impaired	12	30	5.8	17	125	8.8
Cerebral palsied	15	61	11.9	17	115	8.0
Mentally retarded	16	115	22.5	20	310	21.8
Emotionally disturbed	15	69	13.5	16	251	17.6
Learning disabled	15	209	41.0	17	507	35.6
Combination of above	2	25	4.9	6	112	7.8
Total		509			1,420	

Table 1 presents results on the number of children identified by categories. According to school methods of classification it can be seen that the total number of children represented is roughly one-fourth that identified nationally by Rawlins and Gentile in 1970. In both day and residential programs, the largest division was for deaf children with learning disabilities, 41 and 35.6 percent respectively. The question of whether this is a true category arises; or perhaps this is a division that is used as a catch-all for those pupils for which adequate means of identification are not available. The second largest category, mentally retarded hearing impaired pupils, was not as large as expected. Caution is apparently being utilized in the use of this label and this represents, at least for this study, a change from the percentages reported by Rawlins and Gentile. As in the aforementioned study, visual impairments and cerebral palsy represented the lowest number of pupils.

TABLE 2.—*Needs of programs for multiply disabled deaf pupils*

Day schools:	
Trained teachers	9
Curriculum development	8
Vocational curriculum	4
Lower teacher-pupil ratio	3
Identification and evaluation	2
Parent involvement	2
Others	4
Residential schools:	
Trained teachers	14
Curriculum development	8
Vocational curriculum	4
Lower teacher-pupil ratio	2
Identification and evaluation	5
Parent involvement	1
Facilities and appropriate space	6

Participants were asked to list the major needs in their programs for multiply disabled hearing impaired students. These results are reported in Table 2. It is clear that the need for trained teachers and for development of appropriate curricula are of major concern. This factor is underscored by looking at Table 3, which presents results on the preparation required of teachers in these programs. In 50 percent of the day programs and 61 percent of the residential programs, no additional training beyond certification as a teacher of the deaf was required. Special education courses in one or more of the various disabilities were required in 30 percent of the schools. It is quite likely that programs are hesitant to set specific standards for teachers of multiply disabled pupils, especially since such specific personnel are not presently being trained. This point will be referred to again later.

Referring once again to Table 2, it seems that identification and evaluation of these pupils was not a major need. The reasons for this are not clear, but it would appear that schools are making decisions on the placement of these pupils on the basis of academic performance over a period of time, rather than on careful psychometric and psycholinguistic performance. Of course it is realized that instruments and personnel for this type assessment are lacking in many programs.

TABLE 3.—PREPARATION REQUIRED OF TEACHERS OF MULTIPLY DISABLED DEAF PUPILS

	Number	Percent
Day programs:		
None, other than deafness	10	50
Special education courses	6	30
Behavior modification	2	10
Others	2	10
Total	20	
Residential programs:		
None, other than deafness	14	61
Special education courses	7	30
Learning disabilities	2	9
Total	23	

Training programs and schools were asked whether they were providing courses and/or workshops concerning multiply disabled hearing impaired pupils. Eighteen of the 38 training programs stated that such a course was available and of these the course was required in 10. In the day programs, only four of the 20 responding to the question reported they had had a workshop in this area, and nine out of 24 residential schools reported a similar result. Schools were also asked whether a university had made a course on teaching these types of children available on the school campus. Only four day and nine residential programs had had such a course. From this information it would seem that methods and materials are not being made readily available to the schools. If special curricula and services are to be made available in this area, it seems that training programs should take some initiative along this line.

Tables 4 and 5 show results on various instructional techniques and materials that have been found useful in working with these pupils

TABLE 4.—TECHNIQUES BEING UTILIZED IN TEACHING MULTIPLY DISABLED DEAF PUPILS

Techniques	Day school	Residential school
Audio-visual media	19	20
Behavior modification	18	19
Programed instruction	10	16
Project-LIFE materials	10	14
Open classroom	9	5
Micro-teaching	3	5
Interaction analysis	3	4
Computer assisted instruction	3	2
Team teaching	3	5
Others	5	7

TABLE 5.—TEACHING TECHNIQUES AVAILABLE WITHIN TEACHER OF THE DEAF TRAINING PROGRAMS AND OUTSIDE THE PROGRAM

Techniques	In program	Outside program
Audio-visual media	36	17
Behavior modification	28	17
Programed instruction	27	7
Project-LIFE materials	26	(1)
Open classroom	16	9
Micro-teaching	23	7
Interaction analysis	9	7
Computer assisted instruction	12	3

[1] Not applicable.

From these two tables it can be seen that the methods and materials being used most often are also the ones being stressed in the teacher training programs. Certainly behavior modification, programmed instruction, and Project-LIFE materials have and continue to be useful tools in working with multiply disabled hearing impaired pupils. Unfortunately, it was impossible to assess to what degree these techniques are being employed. The lack of use of interaction analysis likely lies more in its newness than in its value. And finally, the economics involved in the use of computer assisted instruction probably prevents its widespread use.

SUMMARY AND RECOMMENDATIONS

Twenty-eight day and 26 residential programs responded to a questionnaire concerning their services to multiply disabled hearing impaired children. Information was requested on the number of classes available, types of multiple disabilities represented, major needs perceived by these schools, and instructional techniques being utilized.

In order to relate how teacher of the deaf training programs are involved with the area of multiple disabilities, a questionnaire was mailed to 58 training programs in the United States. These were asked to provide data on whether courses for teaching multiply disabled deaf children were available and whether trainees were receiving instruction in various techniques which have been found useful in teaching disabled pupils.

From the general findings above, certain recommendations can be made which could be useful to programs for multiply disabled deaf children:

1. There is a need for better procedures of assessment of potential in these pupils. The categories of learning disabilities and mental retardation involve well over 50 percent of the multiply disabled deaf pupils. While these may well be the two major categories, it is quite possible that more refined means of evaluation could place more of these pupils in the regular classrooms of the schools.
2. Since there is a major need for trained teachers in this area, it would seem advisable for a few programs to concentrate on the training of such teachers. And it is also advisable that every teacher of the deaf take at least one course on the multiply disabled child.
3. Universities should become more involved in providing workshops to the schools. Although some universities may not have such a specific course, oftentimes special needs can be met under such titles as seminars, independent study, or field study courses.
4. Whenever possible, use should be made of monies from federal and state grants to provide inservice training for teachers in this area.
5. Consultants should be employed to help develop academic and vocational curricula. More attention should be given to the curricular expertise of these persons than to their relation to the field of deafness.
6. Administration and faculty should become acquainted with the teaching materials that are already available for teaching disabled children. These can provide a wealth of ideas for teaching. Adaptations can often be made to apply these materials to specific children.

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A SYSTEMS APPROACH TO INDIVIDUALIZING INSTRUCTION FOR DEAF CHILDREN

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It seems appropriate to discuss the process of Individualizing Instruction in the Primary Section of this convention since the process itself is better understood and implemented when we think of the young deaf child. In this presentation, I will attempt to describe the efforts of the Callier School for the Deaf (formerly Pilot School) to design and implement a system for Individualizing Instruction for primary age deaf children. The system I will describe is complete in that it provides the framework necessary for implementing individualized educational programs for deaf children. Educational systems are not new—each existing educational program is planned and implemented with the necessary components to provide educational services to deaf children. These systems have been designed to and have become limited by such real factors as available physical facilities and budget for staff and materials—teaching philosophies also have had their impact.

The system I will describe was influenced by these same factors to a degree, but much more effort went into designing a system which was child centered. We tried not to be limited by traditional constraints. The overriding rationale for designing a different educational system was to respond to the question—"Is there a better, more efficient way to educate young deaf children?" We all know the problems which deafness presents to the educational process. With these problems ever present in our minds, we started our systems design. The original proposal funded by BEH for a projected five year plan set forth the following global objectives:

1. To develop (design) an individualized instruction system and;
2. To generalize and research that system in terms of its implementation in other educational settings.

Before I get into an in depth explanation of describing our system, let me say that I believe we have a system and that it is transferable to other schools for the deaf, other special education programs and even mainstream education. I think you will see the significance of this as we move into a more detailed explanation of the necessary conditions for individualizing instruction.

For the next few minutes, I would like to discuss what I consider the first and most important facet of designing an individualized program. Before any activity is undertaken in this area certain basic beliefs must be spelled out and accepted by those who are responsible for the school program. At first glance, this may appear insignificant and an unnecessary step; however, time and time again, it was necessary for us at Callier to remind ourselves of the commitment we had made in the beginning four years ago. The beliefs of which I speak make the administration and teaching staff put down on paper what they want for their deaf children. We had to state our beliefs about school, beliefs about children and beliefs about deafness. In stating these beliefs, we made a definite commitment which would structure all of our future activities. A couple of examples of this should point out what I mean. For instance, if our stated belief is "that a deaf child should learn the English language as rapidly as possible," we would have to be willing to use any methodology which would accomplish this fact. If we stated the belief that every deaf child should have an individual educational program based on an in depth assessment, we would have to decide the parameters of the assessment and decide on the format of the individual study plan and more importantly we would have to have access to the staff to provide the diagnostic assessment necessary to generate the prescriptive program we feel necessary for each child. Each program has its own resources and its own limitations and these should realistically be examined prior to making a commitment to individualizing instruction.

Once beliefs have been stated, it is then easy to move into goals and then objectives so that we have something specific to plan to and design for. I don't think it is necessary to spend a great deal of time on this, but it is an essential step in designing a program of individualized instruction for deaf children. It is essential for any program, but it is a practice which hasn't been very evident in most of our programs today. For the rest of this discussion, I will attempt to show how these commitments are evident in our system.

Along with the beliefs and commitments about school, deafness and children, we had to decide what individualized instruction is to us—how we define it and how we recognize it—how we define it to others. It was necessary to know when we had reached our goal. Our goals were to provide individual prescriptive educational plans for each student based on an individual assessment or diagnostic profile and then provide the necessary materials, curriculum personnel and physical environment to allow the student to achieve this educational plan in his best learning style. With this goal or definition of what we were trying to do, we can in fact evaluate the different parts and see if we have done what we said we were going to do.

To make sure that we could accomplish this, we devised a systems model which I described at the convention in Little Rock. That model has now been translated into an educational program. I will, with the aid of transparencies, try to show you how this transformation has taken place. Appendix 1 is the model which describes our facility; it reflects our thinking and our analysis of what happens to a deaf student in our school. This model would not apply to every program since facilities, personnel, resources and philosophies differ. The important thing, however, is to do a critical analysis of the school so that you can have a visible model to guide you in planning and designing the individualized educational program. Don't confuse this model with the beliefs I mentioned earlier. Those beliefs are statements which allow you to build models.

The first part of the Callier Educational System Model describes how children get into our program. If they meet the intake criterion, they become "learners" and all of the components of our facility and our system affect his educational program. This is described in the "wheel" portion. The learners are in the middle and all identifiable resources are going to influence them. These resources, in effect, make up the curriculum for the children. Each component of the curriculum is spelled out and defined in our systems book so that we can be assured that these resources are available and do in fact assist the student in his learning activities. I will briefly list these resources and describe in more detail those which I consider essential to the prescriptive process. The identifiable components of our educational system are:

1. Grouping of learners.
2. Materials.
3. Prescription.
4. Peer Association.
5. Physical environment.
6. Content vehicle.
7. Time schedule.

8. Kinds of activities.
9. Personnel Resources.
10. The teacher.
11. Assessment and evaluation.
12. Objectives continua.

All of these factors represent what happens to the child in our school. Each one plays an important role in the process of prescribing an individual educational program. The last two (assessment and evaluation and objectives continua) are the foundation blocks for building the individual program for the child. The assessment and evaluation component is the vehicle for determining entering and exiting behaviors from our program. The assessment profile was designed by Dr. Judith Burroughs, Head of Special Services Division at Callier, I am convinced that this work will have a profound effect on educational management of deaf children for years to come.

Before designing an assessment profile for children, it was necessary to describe a model of the learner as we perceived it. (See Appendix 2.)

This diagram illustrates functional components or characteristics of any child as a learner and their relationships. From top to bottom, these components comprise the learning process:

Input factors (home, community, and school environments).
Physical body (biological, neurological).
Sensory intake (audiological, visual, tactile, etc.).
Central processing (integrative, cognitive, language, affective).
Output (gross motor, fine motor).
Products (work, social, academic).

To assess entering behavior of children, Dr. Burroughs designed a format for the assessment profile and gathered together the necessary test instruments which would provide us with the information necessary to plan the individual educational program. The areas measured for the behavioral profile include:

1. Family status.
2. Physical status.
3. Ophthalmological status.
4. Audiological status.
5. Audiological functions
6. Visual functions.
7. Motor functions.
8. Visual-motor integrative functions.
9. Non-verbal cognitive functions.
10. Verbal language functions.
11. Emotional functions.
12. Social skills
13. Work skills.
14. Academic skills.

Appendix 3 represents the computer print-out we have on each child and contains the following data for each profile item of functioning:

1. Item—name—function designation.
2. Source—test used as measure and professional administering measure.
3. Norm—normative scores from the test standardization sample for 6, 7 and 8 year old hearing children.

4. Raw Score—the actual score earned by the individual child on that item at the designated time.
5. Equivalent Score—The raw score is converted to either an age, percentile or grade equivalent for normal children where such converted scores were available.
6. Profile—designates by a horizontal bar graph of X's the percentile ranking of the individual child's score within our population of 6 to 8 year old deaf children.

The Profile data are collected at the time the child enters the program in the fall and again each spring, so that annual progress can be measured.

To utilize the assessment data and prescribe an individualized educational program for each child, we must have a curriculum or educational objective which describes the information we want to teach our children. From the assessment profile we are able to pick and choose educational objectives which will utilize the child's strengths to improve the areas of weakness. The collection of our educational objectives is labelled *Objectives Continua* which represents a behaviorally written curriculum with performance criterion stated for evaluation purposes.

The organization of the Objectives Continua was done in the following manner:

Rationale.—Children should work on activities geared to their developmental readiness levels. Thus, subject matter in each category should be analyzed for perceptual, motor, and cognitive features involved and then sequenced according to a developmental hierarchy of learning. We have organized our Objectives Continua (curriculum) in the following manner.

Subject matter areas:

I. Basic Skills.
    1. Auditory Training
    2. Speech
    3. Motor Skills
    4. Visual Functions
    5. Tactile
    6. Sensory Integration
    7. Non-verbal Cognitive

II. Required Skills.
    1. Grammar (Language Development)
    2. Reading
    3. Math

III. Content areas.
    1. Social Studies
    2. Science

This format allows us to place a child in a program that is meaningful to him and prevents the prescribing of activities for which he is not developmentally ready and also prevents prescribing a program of material which he has already mastered. This format also guides us in the structuring of the physical environment and providing the proper learning centers which contain the proper materials. If it hasn't become obvious to this point, it should be stated now that this systematized approach to planning an educational program takes a lot of guesswork out of our planning activities.

The above discussion has set the stage for the important act of writing the educational prescription. The teacher has the necessary tools to accomplish this by going through the following activities:

1. The teacher examines diagnostic information provided on the Profile of entering behavior.
2. The teacher thinks about her own subjective assessment of the child.
3. The teacher chooses an objective from the Objectives Continua as identified by criterion based testing.
4. The teacher chooses the components of a strategy based on diagnostic information.
5. The teacher estimates a time frame for carrying out the strategy and indicates a date to begin.
6. The teacher enters the criterion for successful completion of the objective.
7. The teacher carries out the strategy for the estimated time frame.
8. The teacher evaluates whether the child met the behavorial criterion specified.
9. If the criterion for the objective is met, the teacher begins to plan the next objective for the child by beginning again on Step #3.
10. If criterion for the objective is not met, the teacher begins with Step #4 to design a new strategy and recycles the objective.

Appendix 4 is the Individualized Study Plan completed by the teacher.

There are many other interesting facets which deserve discussion under the topic of Individualizing Instruction. It is impossible to do all of this in words. One must see children doing things to appreciate this approach to education. A brief slide presentation at the end of this presentation will have to suffice as an attempt to give the visual images to tie this all together.

A few remarks are in order regarding the project which I have attempted to describe. It was a research project and final data has been collected after two years of implementation to see if this approach makes a difference. This data is now being treated to determine the effects of our system on children. We have maintained a control population who have received the traditional approach to educating deaf children. These children and teachers utilized none of the procedures described in this paper. In all 100 children were involved in this project.

Our subjective feeling is that we have seen a very positive change in children's attitudes and involvement in their education. Children make sophisticated decisions and have a very strong voice in managing their own education. Incidental learning is very evident in the process of managing their schedules, recording their performance and completing their contracts. Children move through the program with a purpose. Behavioral problems are many times averted due to the fact that children are doing activities which are commensurate with their capacities and can see their own progress. We don't fall into ruts because each child is considered separately and has his own identifiable program and schedule. In short, children seem to know where they are going and know when they have gotten there.

The parents of our children have noticed a great deal of independence developing in these children. The parents themselves marvel at the ease their children move through what appears to be a sophisticated system. The parents too are able to see where their child is and understand his progress. We can very easily document where the child is in the program and explain why the child is having difficulties in certain areas. The profile discussed earlier provides a good visual reference for understanding children's performance.

This system is being moved down into our pre-school and has already been transported out of this school to classes for older elementary children in the Dallas County Wide Day School for the Deaf. We feel very strongly that this approach is transportable to any school for deaf children. Callier Center is in the process of identifying strategies for doing just this. We believe that dissemination can and should be accomplished through existing facilities such as the Regional Media Centers for the Deaf. Activities in this area are being pursued currently.

Individualized Instruction is something all educators of the deaf consider essential. We believe that our program at Callier can contribute significantly in this endeavor.

ABBREVIATIONS

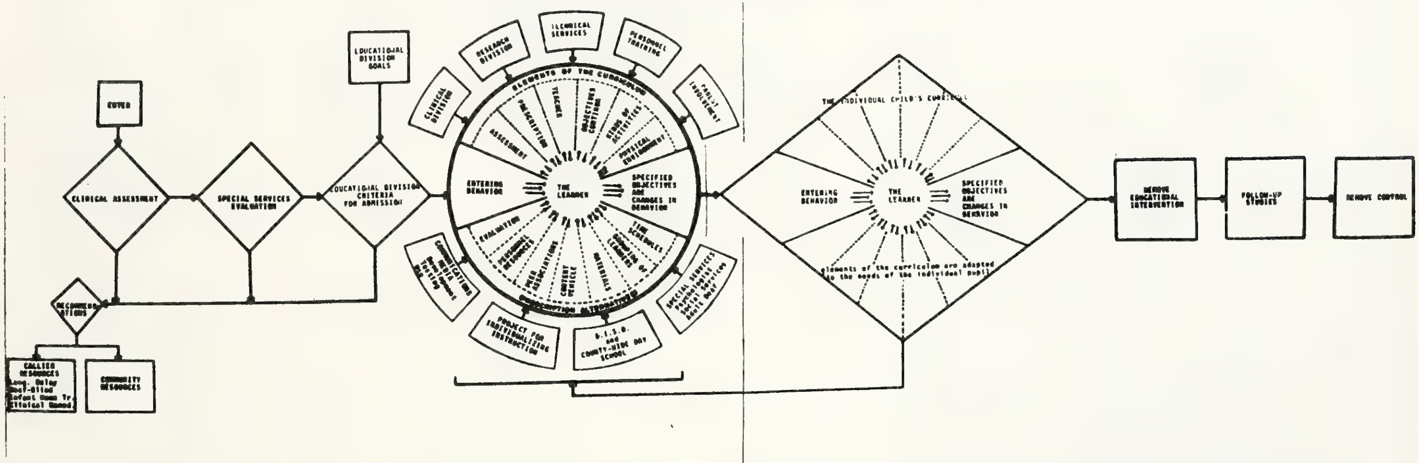
Aide—Teacher Aide
Aud—Audiological
Bren—Brenner Gestalt Test of School Readiness
BSAG—Bristol Social Adjustment Guides
CBRS—Child Behavior Rating Scale
CLI—Craig Lipreading Inventory
DAP—Draw-A-Person
ET—Experimental Task
Fros—Frostig Test of Visual Motor Perception
Hiskey—Hiskey-Nebraska Test of Learning Aptitude
ITPA—Illinois Test of Psycholinguistic Ability
list—Checklist compiled for the Project
MCRE—Mother Child Relationship Evaluation
MST—Miniature Situations Test (Santostefano)
NRS—Neuman Rating Scale (developed at Callier)
NSST—Northwestern Syntax Screening Test
OP—Oral peripheral exam
Oph—Ophthalmological
Osr—Oseretsky
Par—Parent
Phys—Physician
Piag—Piaget
PIF—Personal Information Form
PPVT—Peabody Picture Vocabulary Test
PSLT—Picture Story Language Test
Psy—Psychologist
rate—rated by psychologist
Rec—Student Record
Reit—Reitan Battery
SAT—Stanford Achievement Test
SP—Speech Pathologist
SW—Social Worker
T–D—Templin-Darley Articulation Test
Thr—Teacher
Val—Valett
Vine—Vineland Social Maturity Scale
VMI—Visual Motor Integration Test (Beery and Buktenica)
WISC—Wechsler Intelligence Scale for Children

TABLE 1.—MEASURES UTILIZED IN PROFILE DATA COLLECTION AND THEIR PRIOR USES

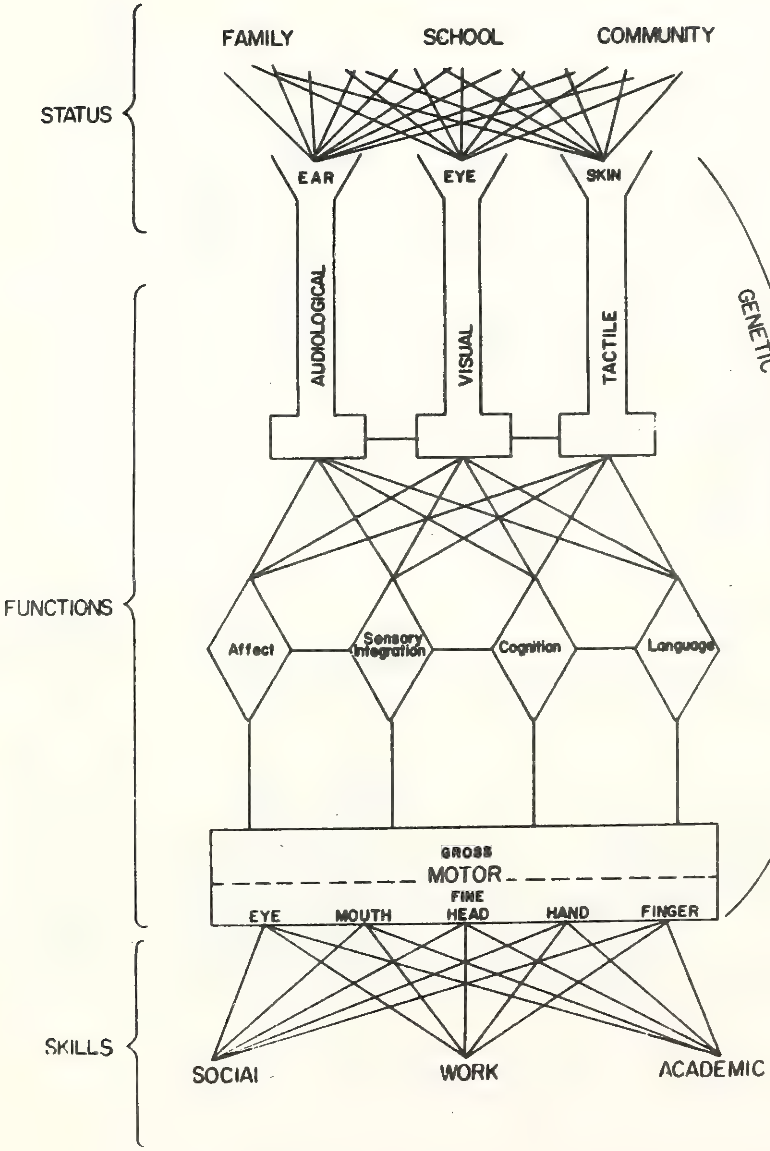
Measure	Hearing populations	Deaf populations
Mother child relationship evaluation	×	
Child behavior rating scale	×	
Illinois test of psycholinguistic ability	×	×
Hiskey-Nebraska test of learning aptitude	×	×
Frostig test of visual motor perception	×	×
Draw-a-person	×	×
Visual motor integration test	×	
Wechsler intelligence scale for children	×	×
Templin-Darley articulation test	×	
Peabody picture vocabulary test	×	×
Bristol social adjustment guides	×	
Vineland social maturity scale	×	×
Brenner Gestalt test of school readiness	×	
Stanford achievement test	×	×
Picture story language test	×	
Reitan battery	×	
Valett	×	
Oseretsky	×	×
Northwestern syntax screening test	×	
Piaget	×	
Miniature situations test	×	
Affect	×	×
Neuman rating scale		×
Craig lipreading inventory		×

Appendix 1

THE CALLIER EDUCATIONAL SYSTEM



APPENDIX 2



Model of the learner

APPENDIX 3

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                                                            DATA FOR SUSAN J. DOE AS [illegible]-71, 12134 PM
                                                                                     SUBJECT NO. 11P   PAGE 1



                                        PROFILE OF ENTERING DATA
                                PROJECT FOR INDIVIDUALIZING INSTRUCTION FOR THE DEAF
                                    THE CALLIER HEARING AND SPEECH CENTER



NAME            DOE, SUSAN J.
DATE OF BIRTH   2-23-65
PARENTS         DOE, JOSEPH AND MARY
AGE (MONTHS)    70
SEX             F
SUBJ. GROUP     II


       ITEM                            SOURCE     NORM       RAW    EQUIVALENT           P  R  O  F  I  L  E
                                                  SCORE     SCORE     SCORE      (<POOR)         PERCENTILE      EXCELLENT>)
                                                                                 0%        25%        50%        75%       100%
                                                                                  *          *          *          *          *
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FAMILY STATUS

   PARENT FIGURES AT HOME              PIF-SW               BOTH
   PARENTS' TYPES (FATH, MOTH          PIF-SW               NAT., NAT.
   NUMBER CHILDREN IN FAMILY           PIF-SW               2
   STUDENT'S RANK AMONG SIBL.          PIF-SW               2
   PARENTS'S EDUCATION YRS. FA,MO      PIF-SW               16, 13
   PARENTS' OCCUPATION  FA,MO          PIF-SW               FOOD MFG, HW
   PARENT INCOME                       PIF-SW               15,000
   RELIGION                            PIF-SW               PROT.
   ETHNIC GROUP                        PIF-SW               CAUC.
   FAMILY AUDITORY PROBLEMS?           PIF-SW               N
 MOTHER CHILD RELATIONSHIP
   ACCEPTANCE                          MCRE-SW    41        46        85 %ILE    XXXXXXXXXXXXXXXXXXXXXXXXXXXX
   OVER-PROTECTION                     MCRE-SW    34        27        17 %ILE    XXXXXXXXXXXXXXXX
   OVER-INDULGENCE                     MCRE-SW    31        27        17 %ILE    XXXXXXXXXXXXXXXXXXXX
   REJECTION                           MCRE-SW    34        37        80 %ILE    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   DOMINANCE-CONFUSION                 MCRE-SW    2.5       2         -888 %ILE

PHYSICAL STATUS

   GENERAL PHYSICAL CONDITION          PHYS-MD              AVG
   STUDENT'S WEIGHT AT BIRTH(OZ)       PIF-SW               101
   HEARING LOSS ETIOLOGY               PHYS-MD              UNK
   AGE OF ONSET(MONTHS)                PHYS-MD              2
   AGE LOSS DISCOVERED                 PHYS-MD              12
   OTHER PHYSICAL DISABILITIES?        PHYS-MD              N
   CHILD ON MEDICATIONS?               PHYS-MD              N
   PHYSICAL ADJUSTMENT                 CPRS-THR   29.5      31                   XXXXXXXXXXXXXXXXXXXXXXXX
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                                                                                        SUBJECT NO. 110   PAGE 2

     ITEM                            SOURCE    NORM      RAW    EQUIVALENT               P  R  O  F  I  L  E
                                               SCORE     SCORE    SCORE       (<POOR)       PERCENTILE    EXCELLENT>)
                                                                              0%       25%      50%      75%      100%
                                                                              .        .        .        .        .
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AUDIOLOGICAL STATUS

   PURE TONE SENSITIVITY RIGHT       AUD-AUD   10        77                   XXXXXXXXXXXXXXXXXXXXXXXXXXX
   PURE TONE SENSITIVITY LEFT        AUD-AUD   10        110
   RESPONSE TO MUSIC UNAIDED         AUD-AUD   10        -888
   RESPONSE TO MUSIC AIDED           AUD-AUD   10        25                   XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   SPEECH AWARENESS UNDAIDED         AUD-AUD   10        -888
   SPEECH AWARENESS AIDED            AUD-AUD   10        20                   XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   SPEECH RECEPTION UNAIDED          AUD-AUD   10        -888
   SPEECH RECEPTION AIDED            AUD-AUD   10        30                   XXXXXXXXXXXXXXXXXXXXXXXXXXX
   SPEECH DISCRIMINATION UNAIDED     AUD-AUD             -888
   SPEECH DISCRIMINATION AIDED       AUD-AUD             40                   XXXXXXXXXXXXXXXXXXXXXXXX
   TYPE OF HEARING LOSS              AUD-AUD             SN
   TYPE OF HEARING AID               AUD-AUD             ZENITH SER.II R

OPHTHALMOLOGICAL STATUS

   PREVIOUS EYE EXAM EVER?           OPHTH               -888
   PREVIOUS ABNORMAL FIND?           OPHTH               -888
   PREVIOUS TREATMENT                OPHTH               -888
   OCULAR PREFERENCE                 OPHTH               RIGHT
   COLOR PERCEPTION                  OPHTH               NORMAL
   FISSURES                          OPHTH               NORMAL
   EXTERNAL DISEASE?                 OPHTH               ABSENCE
   FRONT INTERIOR                    OPHTH               NORMAL
   REAR INTERIOR                     OPHTH               INCIDENTAL
   NEAR ACCOMODATION RIGHT           OPHTH     7.0       6.5
   NEAR ACCOMODATION LEFT            OPHTH     7.0       6.5
   BINOCULARITY NORMAL?              OPHTH               NORMAL
   STEREOPISIS NORMAL?               OPHTH               NORMAL
   MOTILITY (HORIZ. TROPIA)          OPHTH     0         0
   MOTILITY (HORIZ. PHORIA)          OPHTH     0-6       0
   MOTILITY (VERT. TROPIA)           OPHTH     0         0
   MOTILITY (VERT. PHORIA)           OPHTH     0-2       0
   OBLIQUE DYSFUNCTION (RIO)         OPHTH     0         0
   OBLIQUE DYSFUNCTION (LIO)         OPHTH     0         0
   OBLIQUE DYSFUNCTION (RSO)         OPHTH     0         0
   OBLIQUE DYSFUNCTION (LSO)         OPHTH     2         0
   ACUITY WITHOUT GLASSES            OPHTH     20/20     111
   ACUITY WITH GLASSES               OPHTH     20/20     -888
   ACUITY TESTS (SNELLEN ETC.)       OPHTH               SNELLEN-E
   ACUITY PRESENTATION               OPHTH               FULLLINE
   NEAR ACUITY                       OPHTH               STD
   NEURO-OPHTHALMOLOGY               OPHTH               NORMAL
   WEARS GLASSES?                    OPHTH               -888
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                                                                                            -IECT NO. 110    PAGE 3

      ITEM                         SOURCE    NORM      RAW       AGE                 P  R  O  F  I  L  E
                                                       SCORE     SCORE     (<POOR)        PERCENTILE     (EXCELLENT>)
                                                                          0%       25%       50%       75%      100%
                                                                            .         .         .         .         .
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AUDITORY FUNCTIONS

   RECEPTION                       ITPA-SP   25:30:34  3         38         XXXXXXXXXXXXXXXX
   MEMORY                          ITPA-SP   22:25:28  9         36         XXXXXXXXXXXXXXXXXXXXXXXX
   ASSOCIATION                     ITPA-SP   21:25:28  3         34         XXXXXXXXXXXXXXXXXXXX
   CLOSURE                         ITPA-SP             -888      -888

VISUAL FUNCTIONS

   RECEPTION                       ITPA-SP   18:23:25  24        80         XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   MEMORY                          ITPA-SP   17:20:22  14        64         XXXXXXXXXXXX
   ASSOCIATION                     ITPA-SP   20:24:26  19        69         XXXXXXXXXXXXXXXXXXXX
   CLOSURE                         ITPA-SP   19:23:27  16        65         XXXXXXXXXXXX
   ATTENTION SPAN                  WISK-PSY  7:8:8     5         60         XXXXXXXX
   AWARENESS OF DETAIL             WISC-PSY  6:7:8     4         -6         XXXXXXXX

TACTILE FUNCTIONS

   SENSORY SUPPRESSION RIGHT       REIT-AID            15                   XXXXXXXXXXXXXXXXXXXXXXXX
   SENSORY SUPPRESSION LEFT        REIT-AID            16                   XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   SENSORY SUPPRESSION BOTH        REIT-AID            8                    XXXXXXXXXXXXXXXXXXXX
   SHAPE DISCRIMINATION            REIT-AID            16                   XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   OBJECT IDENTIFICATION           VALL-AID            11                   XXXXXXXXXXXXXXXX
   TACTUAL PERFORMANCE RIGHT       REIT-AID            754
   TACTUAL PERFORMANCE LEFT        REIT-AID            189                  XXXXXXXXXXXXXXXXXXXXXXXXXXXX
   TACTUAL PERFORMANCE BOTH        REIT-AID            37                   XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

MOTOR FUNCTIONS

   GENERAL STATIC                  OSR-AID                       72
   DYNAMIC MANUAL                  OSR-AID                       77
   GENERAL DYNAMIC                 OSR-AID                       74
   SPEED                           OSR-AID                       76
   SIMULTANEOUS MOVEMENT           OSR-AID                       74
   SYNKINESIA                      OSR-AID                       76
   MANUAL SPEED RIGHT              REIT-AID            -888
   MANUAL SPEED LEFT               REIT-AID            -888
   ORAL DIADOKOKINETIC RATES (P)   OP-SP               2                    XXXXXXXXXXXXXXXXXXXXXXXXXXXX
   ORAL DIADOKOKINETIC RATES (T)   OP-SP               2                    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   ORAL DIADOKOKINETIC RATES (K)   OP-SP               1                    XXXXXXXXXXXX
   ORAL DIADOKOKINETIC RATES PTK   OP-SP               2                    XXXXXXXXXXXXXXXXXXXXXXXX
   HAND DOMINANCE                  VALL-AID            RIGHT
   FOOT DOMINANCE                  VALL-AID            MIXED
   EYE DOMINANCE                   CPWTH               RIGHT
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                                                                                         SUBJECT NO. 118    PAGE 4


      ITEM                        SOURCE    NORM       RAW       AGE                 P R O F I L E
                                                      SCORE     SCORE    (<POOR)          PERCENTILE     (EXCELLENT>)
                                                                         0%        25%       50%       75%       100%
                                                                           .         .        .         .         .
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VISUAL-MOTOR INTEGRATIVE FUNCTIONS

   EYE-MOTOR COORDINATION         FROS-THR  12:15:17  13        75        XXXXXXXXXXXXXXXX
   FIGURE GROUND                  FROS-THR  16:18:19  -111      -222
   FORM CONSTANCY                 FROS-THR  7:10:12   8         75        XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   POSITION IN SPACE              FROS-THR  5:7:7+    5         66        XXXXXXXXXXXXXXXXXXXX
   SPATIAL RELATIONS              FROS-THR  4:5+:7+   4         72        XXXXXXXXXXXXXXXX
   FORM COPYING                   VMI-THR   11:13:15  9         62        XXXXXXXX
   SPATIAL FORM MANIPULATION      HISK-PSY  4:6:7     3         53        XXXXXXXXXXXX
   SEQUENTIAL MEMORY              HISH-PSY  5:6:6     4         66        XXXXXXXXXXXXXXXXXXXXXXXX
   SPEED OF LEARNING              WISC-PSY  28:33:25  22        70        XXXXXXXXXXXXXXXXXXXX
   BODY IMAGE                     DAP-THR             -888

NON-VERBAL COGNITIVE FUNCTIONS

   ABSTRACT THINKING              WISC-PSY  4:6:8     5         78        XXXXXXXXXXXX
   CONVERGENT THINKING            WISC-PSY  6:11:20   4         66        XXXXXXXXXXXX
   DIVERGENT THINKING             WISC-PSY  10:14:16  7         -6        XXXXXXXX
   ANALOGOUS REASONING            HISK-PSY  --:--:7   1         -4        XXXXXXXX
   CHANGING CRITERIA              PIAG-RES            NO DATA
   CONSERVATION-QUANTITY          PIAG-RES            NO DATA
   CLASS INCLUSION                PIAG-RES            NO DATA

VERBAL LANGUAGE FUNCTIONS
   ARTICULATION SCORE             TD-SP     41:46:47  31        60        XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   -INITIAL & FINAL CONSONANTS    TD-SP     37:39:40  31        60        XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   -INITIAL CONSONANTS            TD-SP     20:21:22  20        72        XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   -FINAL CONSONANTS              TD-SP     17:18:19  11        60        XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   -ITELLIGIBILITY                TD-SP               3         -222      XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   STIMULABILITY                  TD-SP               2         -222      XXXXXXXXXXXXXXXXXXXXXXXX
   RECEPTIVE VOCABULARY           PPUT-THR  56:61:66  20        30        XXXXXXXXXXXXXXXXXXXXXXXX
   RECEPTIVE SYNTAX               NSST-SP             -888      -888
   EXPRESSIVE SYNTAX              NSST-SP             -888      -888
   GRAMMATIC CLOSURE              ITPA-SP   17:21:24  1         26        XXXXXXXX
   VERBAL EXPRESSION              ITPA-SP   21:27:32  12        53        XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   MANUAL EXPRESSION              ITPA-SP   21:24:26  17        60        XXXX
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                                                                                                         SUBJECT NO. 117     PAGE 9

     ITEM                                SOURCE    NORM       RAW       AGE                P  R  O  F  I  L  E
                                                              SCORE     SCORE     (<POOR)        PERCENTILE      (EXCELLENT>)
                                                                                  0%        25%        50%        75%       100%
                                                                                   .         .          .          .          .
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EMOTIONAL FUNCTIONS

   RELATIONSHIP LEVEL                    RATE-PSY             2
   MOTIVATION LEVEL                      RATE-PSY             2
 PERSONALITY FACTORS
   -AGGRESSION                           MST-PSY              4                   XXXXXXXXXXXXXXXXXXXXXXXXXXXX
   -RISK                                 MST-PSY              4                   XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   -SELF DISPLAY                         MST-PSY              3                   XXXXXXXXXXXXXXXXXXXXXXXXXXXX
   -COMPULSIVITY                         MST-PSY              3                   XXXXXXXXXXXXXXXXXXXX
   -CONTROL                              MST-PSY              3                   XXXXXXXXXXXXXXXXXXXXXXXXXXXX
   AFFECT AWARENESS                      ODOM-AID             -111
   SELF ADJUSTMENT                       CBRS-PAR  95.5       31                  XXXX
   PERSONALITY ADJUSTMENT                CBRS-PAR  436.5      422                 XXXXXXXXXXXX
   INDICATIONS OF MALADJUSTMENT          BSAG-THR             4                   XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   -INHIBITION                           BSAG-THR             0                   XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   -WITHDRAWAL                           BSAG-THR             0                   XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   -DEPRESSION                           BSAG-THR             0                   XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   -ANXIETY TO ADULTS                    BSAG-THR             1                   XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   -ANXIETY TO PEERS                     BSAG-THR             1                   XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   -LACK OF CONCERN                      BSAG-THR             1                   XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   -HOSTILITY TO ADULTS                  BSAG-THR             1                   XXXXXXXXXXXXXXXXXXXXXXXXXXXX
   -HOSTILITY TO PEERS                   BSAG-THR             0                   XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   -RESTLESSNESS                         BSAG-THR             0                   XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
SOCIAL SKILLS

   SCHOOL ADJUSTMENT                     CBRS-THR  57.5       56                  XXXXXXXXXXXXXXXXXXXXXXXXXXXX
   HOME ADJUSTMENT                       CBRS-THR  94.5       59                  XXXXXXXXXXXXXXXXXXXXXXXX
   SOCIAL ADJUSTMENT                     CBRS-PAR  95.5       86                  XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   MATURITY                              VINE-PAP  61:65:70   66                  XXXXXXXXXXXXXXXXXXXX
   EXPERIENCES                           LIST-PAR             7.2                 XXXXXXXXXXXXXXXXXXXX


WORK SKILLS

   INVOLVEMENT                           NRS-THR              6                   XXXXXXXXXXXXXXXX
   INDEPENDENCE                          NRS-THR              18                  XXXXXXXXXXXX
   MOTIVATION                            NRS-THR              12                  XXXX
   DISCIPLINE                            NRS-THR              17                  XXXXXXXX
   ATTENTION                             NRS-THR              19                  XXXXXXXX
   FRUSTRATION                           NRS-THR              9                   XXXXXXXX
   SELF-CONCEPT                          NRS-THR              17                  XXXXXXXXXXXXXXXX
   INTERPERSONAL RELATIONSHIPS           NRS-THR              9                   XXXXXXXXXXXXXXXXXXXX
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                                                                                                     SUBJECT NO. 110      PAGE 6



       ITEM                            SOURCE     NORM        RAW         AGE                  P R O F I L E
                                                             SCORE       SCORE    (<POOR)            PERCENTILE      (EXCELLENT>)
                                                                                   0%        25%        50%        75%       100%
                                                                                    *          *           *          *          *
--------------------------------------------------------------------------------------------------------------------------------------


ACADEMIC SKILLS

   NO. YR. IN SCHOOL                   REC-THR                4
   SCHOOL READINESS LEVEL              BREN-THR               60                    XXXXXXXXXXXXXXXXXXXX
   -NUMBER PRODUCING                   BREN-THR               3                     XXXXXXXXXXXXXXXXXXXXXXXXXXXX
   NUMBER RECOGNITION                  BREN-THR               6                     XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   -TEN DOT GESTALT                    BREN-THR               3                     XXXX
   -SENTENCE GESTALT                   BREN-THR               0                     XXXXXXXXXXXX
   -DRAW A MAN                         BREN-THR               -888
   READING-WORD                        SAT-THR                8           1.1 GRADE XXXXXXXXXXXX
   READING PARAGRAPH                   SAT-THR                2           1.1 GRADE XXXX
   READING -VOCABULARY                 SAT-THR                13          1.3 GRADE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   READING-SPELLING                    SAT-THR                0           -888 GRADEXXXX
   PRODUCTIVITY-WORDS                  PSLT-THR               1           -888      XXXXXXXXXXXX
   PRODUCTIVITY SENTENCES              PSLT-THR               0           -888      XXXX
   PRODUCT. WORDS/SENTENCES            PSLT-THR               0           -888      XXXX
   SYNTAX QUOTIENT                     PSLT-THR               0           -888      XX
   THOUGHT-ABSTRACT/CONCRETE           PSLT-THR               0           -888      XXXX
   SPEECHREADING WORDS                 CLI-AIO                25                    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   SPEECH READING SENTENCES            CLI-AIO                10                    XXXXXXXXXXXXXXXXXXXX
   ARITHMETIC COMPUTATION              SAT-THR                20          1.2 GRADE XXXXXXXXXXXXXXXXXXXXXXXXXXXX
   ARITHMETIC CONCEPTS                 SAT-THR                10          1.1 GRADE XXXXXXXXXXXX




                                             EXPLANATION TO TEACHER
     A BLANK SCORE INSTEAD OF A NUMBER OR WORD MEANS THAT THERE IS NO APPROPIATE DATA TO GO IN THAT COLUMN AND ROW.
A SCORE OF -999 MEANS THAT FOR SOME REASON SUBJECT COULD NOT BE TESTED.
A SCORE OF -888 MEANS THAT FOR SOME REASON SUBJECT WAS NOT TESTED ON THAT PARTICULAR ITEM.
A SCORE OF -111 OR -222 MEANS THAT THE DATA WAS NOT IN THE COMPUTER AS OF 19-NOV-71 AT 12:35 PM
A LONG NUMBER SUCH AS (.37420129E-3521) IS A COMPUTER ERROR.
```

APPENDIX 4

INDIVIDUALIZED STUDY PLAN

________ TEACHER

________ PUPIL'S NAME OR SUBJECT AREA*

________ BEGINNING DATE THIS PLAN

*SUBJECT AREA OR PUPIL'S NAME	OBJECTIVE FROM CONTINUUM	ADDITIONAL OBJECTIVES	VOCABULARY	COMMUNICATION INPUT	COMMUNICATION OUTPUT	MATERIALS... FORMAT... CONTENT VEHICLE...	KIND OF ACTIVITY	GROUPING TYPE	LOCATION (WHERE?)	PERSONNEL AND PEERS	EST. TIME FRAME ACTUAL TIME FRAME	DATE BEGUN DATE ENDED	CRITERION	EVALUATION

REFERENCES

Project for Individualizing Instruction for the Deaf, *Revised Educational System*, December 1972. Callier Hearing and Speech Center, Dallas, Texas.

Burroughs, Judith R., and Ira Weiss. Profile of diagnostic information designed to describe the individual learner. (Unpublished paper) Callier Hearing and Speech Center, Dallas, Texas.

THE AUDIOMETRICALLY HARD OF HEARING, DEAF CHILD

Jerry E. Prokes, director, Child Study Center, Florida School for the Deaf and the Blind, St. Augustine

As an audiologist in a school for the deaf I have been involved with an educational diagnostic team. We have seen approximately 1500 hearing impaired children for evaluation in the past 6 years. Approximately 8% of the children that we recommended for placement in programs for the deaf were audiometrically hard of hearing. In our state a 70 dB Best Binaural Average is a minimal requirement for placement in a deaf education program. These youngsters, by and large, did not seem to be typically hard of hearing in relationship to their abilities to learn. They either had been in programs for the hearing impaired or in regular programs; but in all cases their parents or teachers realized that placement was inappropriate.

It is from this professional experience and from my conviction that a child's level of function is more important than labels that tempted me to discuss this subject with you. I am not a professionally trained psychologist or teacher of the deaf, but I feel that these observations and conclusions make good sense.

My topic for today is the audiometrically hard of hearing, deaf child. It is obvious that this sounds like a contradiction of terms. And it is. I would like to discuss those youngsters who, at first glance, look hard of hearing from an educational standpoint.

I guess that it is time for me to define terms as I will be using them in the context of this discussion.

Hearing impaired child: Hard-of-Hearing—A child who has a hearing loss to the degree that it may affect a delay in the development of normal language and speech, but who is, with amplification and aural rehabilitation (speech reading, auditory training, and maybe some supplemental teaching) basically able to learn new information auditorially.

Hearing impaired child: Deaf—A child who has a hearing loss to the degree that it seriously affects the development of language and speech and must, by the nature of his involvement, learn new information primarily through channels other than auditory ones.

I will amplify these basic operational definitions later in this paper.

The major reason for doing audiological evaluations with hearing impaired children is to establish their individual "level of auditory function". Pure tone air and bone conduction audiometry, speech reception thresholds, and discrimination tests all result in raw data that are helpful in understanding a child's auditory function. The above mentioned tests, given alone and interpreted by someone lacking "expertise" with hearing impaired children can easily lead to classification by dB loss only.

Classification differs from diagnosis in that the former simply relies on applying a simple mathematical formula to a pure tone test and matching the answer to a chart. Diagnosis goes the additional mile in that it compares all the normal auditory parameters to the child being studied. These auditory parameters are hearing, perceiving, integrating, synthesizing and conceptualizing a spoken word as a useful language tool. The interpretation of the way a hearing impaired child uses auditory information as compared to the normal hearing child's use raises hearing testing to the art of diagnosis.

The highest level of communication between two individuals is through the use of numbers; next highest is graphs, next pictures, and lastly the poorest stimuli for communication is words, i.e., one is always one regardless of what you are counting and a picture, if drawn with any degree of talent is easily understood. However, the word red is as inexact a description as it is possible to achieve. Ascribing numerical values of 1 to 1000 to the hue of red with 1 being the lightest and 1000 being the darkest hue would come closer to more exactly describing to someone else the color under discussion.

This, I think, is why we in the profession of audiology would really like to talk in terms of numbers. It is so descriptive and exact. Right? Wrong.

The exactness of pure tone averages in describing children is subject to extensive criticism except perhaps in those cases of children who were born with severely profound or total losses. These can be easily described by simply saying 110 dB+ B.B.A. and it is rather impossible to use the audiologist's "bag of tricks" to measure something that is not there.

People talk about the team approach to the study of almost everything. I really must go along with this and feel that I cannot stress enough the need for a team to function as a team in evaluating the educational placement of hearing impaired children. This team should include an audiologist, psychologist, diagnostic teacher, social worker, and guidance counselor.

Complete case histories from one or both parents are the foundation of an educational evaluation with any hearing impaired child, but become much more significant when comparing the educational differences of the hard of hearing and the deaf. A careful collection of prenatal, natal, postnatal, medical, developmental and academic histories of the child are of paramount importance. Complete audiological evaluation, psychological evaluation and school readiness or academic achievement data are needed. A complete study of all aspects of communication, written and spoken, read and received, expressive and receptive, is necessary. A developmental evaluation is also indicated. Mrs. Margaret Haines of our Child Study Center staff will present a paper in this section on Wednesday.

After all these data have been collected it is important that the professional team participate in a complete staffing. Children with mild to moderate or those with profound to total losses will probably present a less complicated problem of diagnosis and recommendation for educational placement.

It is that child who falls within the grey area of moderately severe to severe hearing loss that we will discuss. In terms of a dB loss, this grey area will vary from approximately 50 dB to 70+ dB. (Another label for this population could be severely hard of hearing.) According to the Office of Demographic Study, Series "D" Number 10, there are 5,078 children in programs who fall within this range. They represent 12.4% of all hearing impaired children in programs studied in the school year 1970–71.

In my opinion there are at least five categories of additional problems that, in conjunction with an audiometrically hard of hearing loss, may dictate placement in a program for the deaf. The influencing factors could be the audiometric configuration; depressed performance scale IQ; psychological problems; learning disabilities; and academic deprivation or some combination of these.

Audiometric configuration.—As you know, the standardized method used to arrive at a decibel rating of hearing loss is the B.B.A. Best binaural average is tabulated by adding the better pure tone air conduction results for either ear at 500 Hz, 1000 Hz and 2000 Hz and dividing by three. These particular frequencies are used as a basis of describing hearing loss in the "speech range" of the auditory spectrum. This relatively narrow band of frequencies (1500 Hz) falls at the base end of the usually described range of human hearing 15–15000 Hz. I understand that the normal telephone receiver passes a band of 300 to 3000 Hz and people with normal hearing usually have no difficulty understanding speech over a telephone.

Using B.B.A. approach for educational placement may give a spurious result. For instance, a child with a rapidly falling audiogram (precipitous ski slope) may have a fairly low B.B.A. loss. Let's say the air conduction loss for the better ear is 20 dB at 500; 50 dB at 1000 Hz, and 80 dB at 2000 Hz. This is not an unusual picture. If you have mentally calculated the B.B.A. for this example, you have arrived at a 50 dB hearing loss. One could arrive at the same average with a flat loss at 50 dB for each of the speech frequencies. These two losses are similar in audiometric identification, but may be poles apart from an educational standpoint.

The flat loss would probably be more successfully amplified by a good moderate gain hearing aid. Speech and language would be affected to a mild degree. Speech, voice quality and general aural attention would be quite typical of a hard of hearing child. If this child has no other additional handicaps, he will probably be educated as a hard of hearing child and have relatively no academic problems.

Now the child with the sharp ski slope loss presents a different picture. His speech, oral language, may be good. Speech quality, articulation and voice quality, may sound *almost* normal to the unsophisticated listener or may have a slight foreign sound His aurally receptive language ability will be much poorer than his expressively spoken or written language His auditory behavior may be characterized as inconsistent or bizarre, and he will probably be a poor aural rehabilitation candidate from the standpoint of a wearable aid. Hearing aids are basically amplifiers and are not too discrete in what they amplify. They will amplify 500 cps almost the same as 2000 Hz. Parents, friends, teachers and strangers will comment on the inconsistency of auditory behavior, i.e., Johnny is walking down the hall and an over-zealous teacher says, "Johnny" behind his back and in a voice somewhat lower than general conversational level. Johnny turns around, seemingly because he heard his name. Probably all he heard was "ahn" and only responded to a new sound in his environment. This same teacher sees Johnny in a classroom situation and he doesn't seem to understand what is being said to him. She may raise her voice, shout, and become upset because he still doesn't understand. When he does answer, incorrectly, his oral speech is pretty good. The teacher immediately comes to one of several conclusions: 1. This kid is retarded, or 2. This boy just doesn't pay attention, or 3. What kind of bizarre psychological problem are we dealing with—he turns people off and on auditorially at will. Well, this of course could never happen if the teacher were a trained teacher of the deaf.

Poor child—he was getting auditory information, some at near normal levels, but it was so fragmented as to be virtually useless. Kind of like loud squeaky springs.

Let's try this boy's written language. He spells miserably, has poor syntax, no articles and poor tense sense.

Maybe with proper amplification, speech reading, auditory training, good luck and a superior teacher, he can make it in a regular program. If he is fortunate, he can find a class for the hard of hearing, if one exists. Most likely, though, he will end up academically deprived, perhaps anxious and maybe a real behavior problem.

Now I'm not talking about all hard of hearing children with high frequency hearing problems, but there are a sufficient number who just don't hear enough of the right sounds to learn primarily through audition alone. This is the child who should be considered for placement in a deaf education program. There will be problems for him from the identification standpoint—he won't quite fit with the deaf socially, nor the hearing. His teacher of the deaf will expect more from him because he sounds so hearing. He can make it educationally and will if he is properly evaluated and placed within an educational environment that understands his special needs.

The second category is a very difficult one to talk about, since it has to do with native, measurable intelligence. I am not going to try to give you a crash course in the function of intelligence in learning, nor how to test intelligence.

Here again I am not speaking about all hard of hearing children, but a significant number to bring to your attention. It is this added handicap that may make it necessary to look beyond the audiogram for proper educational placement. Let us, again, briefly look at the combination of decreased hearing and decreased intelligence. Fusfeld and Brill both agree that the addition of prelingual deafness depresses the intellectual function of a child. They do not agree on how much this is depressed, but it is between 10 and 20 IQ points. This does not mean that hearing loss causes an impairment of actual intelligence. It means that the decreased hearing will cause learning difficulties that are superimposed on intelligence and will manifest a difficulty in terms of expected performance. If we expect a child with normal hearing and normal intelligence to function educationally at a given level, we should then look at a hearing impaired child with the same measured IQ and expect somewhat less from him.

The 10 to 20 IQ point-type function will be much more significant when dealing with hard of hearing children than with clear cut educationally deaf children. Remember, it isn't intelligence that is changed by decreased hearing, but function when compared to a non-hearing impaired child.

There is no way to be specific about a co-relationship between dB loss and IQ functional loss, but we must keep in mind that there is a general functional corollary.

If we use a dB cutoff of 70 dB ANSI as the minimal BBA for enrollment in a program for the deaf, we simply must take decreased intelligence factions into account when making educational recommendations. Perhaps, and again this is hypothetical and not true of all hard of hearing children, a child with a reliable performance of I.Q. 80 and a 60 dB BBA may really be functioning more like a deaf child than a hard of hearing child. He probably should be placed educationally with deaf children. I am not advocating that retarded children should be educated with deaf children or that retarded deaf and normal deaf should be educated together. I feel that the slightly better hearing of hard of hearing children will somewhat compensate for a slight decrease in intelligence and from an operational level place the low average hard of hearing child on a comparable level with an auditorially deaf child of average intelligence. To say this another way, the slightly better hearing of a grey zone hard of hearing child may help compensate for a slightly lower performance IQ, thus rather equaling out the handicaps of each group.

I can't prove any of this, but it makes good sense to me. Here is a wide-open area of exploration.

This seems to be a proper place for me to state my professional feeling about multi-handicapped children and education. Generally speaking, I feel it is the responsibility of an educational diagnostic team to make judgments about the primary deterrent to the education of a multi-handicapped youngster. Educational placement should be made on the basis of the primary educational handicap. As an example, an audiometrically deaf, mentally retarded child should be considered for placement in a program for the retarded if the retardation alone and not the deafness is sufficient to cause a marked decrease in educational attainment. I feel very strongly about this in all combinations of hearing impaired children multi-handicapped.

The third area is really a vague one, but I feel it must be aired. Some hard of hearing children develop emotional-type problems that may depress their functioning to the point that they need deaf education. Deaf education may prevent serious psychological problems with hard of hearing children who are under stress in a hard of hearing educational environment. A judgment concerning an educational placement with this type of severely hard of hearing child usually would not be necessitated until after the child had completed his education at the preparatory or lower primary level. These youngsters are also in an unique position of joining the mainstream of society or the social sphere of the deaf by virtue of the educational environment.

Again, it must be emphasized that as long as the hearing loss is the primary deterrent to an education, they should function in a hearing impaired child's milieu. If the emotional problems become paramount, special placement or management would then be necessary.

The psychologist's tools for diagnosing the continuum of normal to disturbed behavior with hearing impaired children are very unreliable and not standardized. When dealing with this type of hard of hearing child, clinical judgment would seem to be a major resource for an educational team.

The above vague area sort of blurs into the next area of discussion, learning disabilities. Much is being said here at this convention on the diagnosis and remediation of learning difficulties. This area as the others I have tried to touch on is a major topic. However, in the spirit of this paper, I feel obligated to make some comment on hard of hearing children and learning problems.

According to Katz and Illmir, phonetic synthesis, auditory discrimination, speech-in-noise and dichotic listening skills have been studied and found to be related to learning disabilities. Auditory memory is generally felt to play an important role in the learning process, but perhaps the most important auditory skill for academic learning is phonemic synthesis.

As best I can tell from reviewing the literature, research in the area of auditory perception has been done with "normal" hearing individuals. In conversation with Dr. Tony Bashee of Boston, I asked if he had any ideas about how hearing impaired children might stack up in the area of auditory perceptual problems or to auditory learning problems. He indicated that this surely was an area of great need for study, but kindly said he refused to even think about it due to its possible magnitude.

Johnson and Myklebust state that children with auditory learning problems in some ways are similar in behavior to the deaf. Since they do not interpret sounds, they become more visually and tactually oriented.

A hard of hearing child with manifest general or specific learning difficulties presents a challenge in academic placement. Again I feel that if the learning disability is not judged to be prevalent, then the hard of hearing child with the added handicap may prosper and be more appropriately placed in a program for the deaf. At least, one should give serious study to the reclassification of a child and consider him for a more visually-oriented educational program.

Within the topic of academic deprivation, almost everything that has been said previously may apply under this broad heading. Undetected academic retardation may not have been isolated and when it is, the educational lag must be managed.

We have seen some hard of hearing children at eight years of age and older who have never been in a program. This could be due to the lack of an appropriate program or the parents inability to find one. Perhaps a deaf education program may not be indicated, but if nothing else is available, the child must receive an education. If there is no alternative, so be it.

This is an area where the admission of academic failure dictates that a program was inappropriate for a given child. The failure, not necessarily the child's, is obvious. It may not be possible to pinpoint the reason why a previous educational program did not meet the needs of the youngster. Change is indicated on the basis of trial and failure. Frequently these children are pre-teenagers and may never catch up, but must not be discounted.

However, by simply placing them in a deaf education environment does not always insure a change in the educational approach used with him. It would be very easy for a teacher of the deaf to fall into the same trap as the previous teacher, simply because his speech was not typically deaf. By comparison with the other students in the deaf education program it might be easy to assume that audition is his primary avenue of learning. If a child sounds deaf one teaches him as though he is deaf, but if he sounds as if he has near-normal hearing, one expects him to hear normally.

In summary, what I have tried to bring to you is my conviction that some hard of hearing children function more like deaf children than normally hearing children. My opinion is that there are at least five major secondary handicaps that may make this difference. Hard and fast BBA ratings, IQ cutoffs, and disregard for individual differences must be discouraged. Appropriateness of educational placement for an individual child to develop his highest level of literacy is the consideration.

We talked briefly on how a strange audiometric configuration may interfere with auditory learning and cause a more visual program to be recommended.

The importance of intelligence in using fragmented diminished auditory information was viewed. Possible psychological problems and/or learning disabilities were the last two added handicaps to be discussed in relationship to the academic placement of a hard of hearing child. Lastly, the burden of academic deprivation and hearing loss was discussed.

RESOURCE LIST

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Kirk, Samuel A. *Educating Exceptional Children.* Houghton, Mifflin Co., Boston: 1962.

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DEVELOPMENT, IMPLEMENTATION AND MEDIATION OF CAREER EDUCATION

Darrel Randall, M.S., career education curriculum coordinator, Texas School for the Deaf, Austin

The school experience becomes a total environment for the deaf individual due to his communication differences with hearing peers. Yet given the difficulty in reading and language development imposed by deafness, can the majority of deaf students benefit profoundly from an environment in which mastery of the English language is the sole avenue of promotion? Ironically and cruelly the deaf child is led to the highest sense of expectation in an area where natural intelligence remains subordinate.

When the hearing child is confronted with visions of academic failure he turns about face to the blatant alternative of the work-a-day world. This alternative is less blatant to the deaf child and it falls to the school to "teach" work in an appreciable perspective.

The staff of the Texas School for the Deaf has recognized these problems and has accepted the responsibility to improve the situation through a new program called Career Education. Career Education has been described as the total effort of public education and the community to help all individuals become familiar with the values of work and to implement those values in such a way as to make work possible, meaningful, and satisfying to each individual. The Career Education program supposes that during a child's formative years purposeful study of the world of work will multiply opportunities for success in later life.

Texas School for the Deaf Superintendent, Gary A. Curtis, recently listed career preparation as one of the School's top priorities. A career development plan for students at the Texas School for the Deaf has been outlined. This plan is leveled and will be implemented in three phases. Career Education was introduced in the Texas School for the Deaf Elementary School last fall. The third through fifth grade students participating in the new programs are already showing an appreciation and understanding of the many career fields.

Plans are underway to include Texas School for the Deaf Junior High students in the fall of 1973 and High School students the following year in the Career Education Program.

The first phase, "Career Awareness", is designed to make third, fourth, and fifth level students aware of the wide range of available career choices. The second phase, "Career Exploration", will involve junior high age children and focus on job sample experiences and coordinate academic classroom study with experience in the vocational school. The third phase, "Career Preparation", will enable the high school student to begin specializing and developing skills in an occupation.

Objective of C.E.:

To provide students with three alternatives.
1) Exit with an employable skill in one area and practical exposure in a second.
2) Exit with skills and capabilities to enter a post vocational program.
3) Exit with academic achievements to enable entrance into a college.

Goal for C.E.:

To influence proper attitudes in our children toward the world of work and make work possible, meaningful, and satisfying to them by giving them the skills and desires to work.

Texas School for the Deaf Career Development Plan

Job

Job — College — Jr. College

Cooperative Specialization;Level 12 — further study of skills and/or on the job training

Formal Specialization;Level 11
180 days — in-depth study of skills

Career Preparation;Level 10
Two areas;90 days each area

Career Investigation;Level 9
Three areas;60 days each area

areas are selected based on experiences of career exploration, interest, abilities, and a consultation with parents at close of Level 8

Career Exploration;Levels 6-8
Taught two hours day/30 days area

1) bakery
2) business training
3) photography
4) lithography & printing
5) upholstery
6) woodworking
7) cleaning & pressing
8) foods
9) clothing
10) auto mechanics
11) horticulture
12) building trades
13) janitorial services
14) electronics
15) drafting
16) metal work
17) nursing
18) teaching and library media training

Career Awareness;Levels 3-5
Taught two hours day;180 days year

1) family
2) dairy
3) bakery
4) police department
5) fire department
6) post office
7) farmer
8) general transportation
9) TSD school staff
10) carpenter
11) shopping center
12) household maintenance
13) soft drink industry
14) meat processing
15) city
16) county
17) hospital
18) farm to market
19) airport
20) training program
21) home construction
22) pers.-care business
23) auto maintenance
24) toy repairing
25) wholesaler to consumer
26) Tx. Dept. Pub. Safety
27) Govern. Ser. Jobs
28) comal cotton, horti.
29) highway system
30) spec. build. trades
31) banking, budgeting
32) build. main. serv.
33) lumber industry
34) Glastron Boat Co.

Career Recognition;Levels K-3

Pre-School Career Observation
Formal Education;home and community experience

DEVELOPMENT

Principal James S. Howze, believing that the school could better prepare the students for life, laid the groundwork for the new program more than a year ago. Mr. Howze and Mr. Dean Cunningham, administrative assistant for the Texas School for the Deaf, developed an occupational proposal entitled "Development of a Career Education Curriculum for Deaf Students at the Texas School for the Deaf".

This project was approved and federally funded through the Department of Occupational and Technical Education, Texas Education Agency.

The responsibility of putting this proposal into action was given to me. A committee of 15 teachers, representing Elementary, Junior High, High School, and Vocational Schools, and I educated ourselves in career education concepts and methods in a summer workshop.

The committee decided to divide the program into three phases and to concentrate on the first phase for the 1972–73 school year.

Awareness

For the Career Awareness phase, the committee found that all jobs could be grouped into job clusters. Eleven general job categories, appropriate to the third through fifth level, were selected. These general topics were then broken down into smaller clusters of jobs—36 in all—to be studied during the three year period. For example, in the business cluster the shopping center is studied during the third level, personal care business during the fourth and the banking business during the fifth level. Further, under the general topic of maintenance, the third level studies household maintenance; the fourth level auto maintenance; and the fifth, building service maintenance. At the end of the awareness phase, the student will have been exposed to many jobs and clusters of jobs.

Objectives for Career Awareness

A. Provide career related opportunities in which meaningful work language development will occur.

B. Provide opportunities in which students will become aware of and appreciate job and clusters of jobs.

C. Provide opportunities which will begin to develop the skills required in different jobs.

The following chart shows the interrelationship of the units taught in the third, fourth, and fifth grades.

CAREER AWARENESS

General topics of career education	Grade 3 units	Grade 4 units	Grade 5 units
Family	Family		
Food products	Dairy, Bakery	Meat processing	Wholesaler to consumer, restaurant, grocery.
Protective services	Police department, fire department.	City, county	Texas Department of Public Safety.
Social services	Post office	Hospital	Government service jobs social security.
Agricultural services	Farmer	Farm to market	Cotton, horticulture.
Transportation	General transportation	Airport	Highway systems.
Educational system	TSD school staff (include medical service).	Training program	
Construction	Carpenter	Home construction	Specialized building trade.
Business	Shopping center	Personal-care business	Banking budgeting.
Maintenance	Household maintenance	Auto maintenance	Building and maintenance service.
Industrial	Soft drink industry	Toy repairing	Lumber industry, Glastron Boat Co.

After the 36 job units were selected, teams of teachers wrote activities and found resources for each unit. Interestingly, the members of the committee learned their first lesson in career education when they performed all the skills necessary to print books for levels three, four, and five of career awareness in the vocational department.

During Phase I Career Awareness was established as an integral part of the curriculum. The entire curriculum was rescheduled to make career education an interdisciplinary concept. Teachers were grouped into blocks of six. Each teacher is responsible for a two hour period in career education and one hour of math. The teacher then specializes in social studies, science, or reading for the remainder of her six hour class load. The P. E. period is used for preparation by the teachers. Six teachers constitute a block and all of their children are rotated within the block. Teachers plan together thus making it possible for career education concepts to be planned into all disciplines. The two hour period has been used as a time to take field trips, construct projects, make video tapes, combine classes and share information, and reinforce language development. The two hour period was long enough for classes to go on field trips, permitting the teacher to teach concepts on the spot while the children were excited about learning. The children could ask questions, make sketches and write sentences about what they were seeing. This time was used by the classes to write the script, build the scenery and work out the action for a video tape. Projects in construction, horticulture, crafts, and career development took advantage of the longer period.

IMPLEMENTATION

Teachers cited five characteristics of the Career Education program as unique:

1. Language development (Little Worker)
2. Self concept development (Project Share)
3. Community awareness (Field trips)
4. Practical math (T. S. D. Bank)
5. Physical skill development (Projects)

As the teachers implemented the outlined units, they found that career education was extremely useful as a motivator to teach language. Trips and projects preceded and followed up by language reinforcement were used for creative language development.

A departmental newspaper called "The Little Worker" provided a vehicle in which children were encouraged to practice their language skills. The newspaper used the language and drawings of the children without changes or corrections. This approach has encouraged the children to write whose previous efforts met only grammatical changes and frustrating corrections.

The language of the children steadily improved as the year continued and more of the lesser skilled students started to contribute to the paper. Voluntary articles about the jobs they were studying permitted the children to express their concepts concerning different careers. Many of the sketches made by the children demonstrated their understanding of the concept even though they could not express it in written language. The newspaper also featured a "Want Ad" section. Children could answer this ad, receive an application and have a job interview.

Project Share

Self concept is similar to the weather; it is something we all talk about but really do little about.

Project Share is a program designed to give the deaf child a chance to do something for others thus helping them but also helping his self concept. This project uses the concept of children teach children. This has proven successful when our fifth grade children have learned new concepts and then have had a chance to teach these concepts to others. For example our fifth grade classes studied the workers in a garment factory and simulated each of these job tasks in making a wall hanging. The job skills of a patternmaker, marker, cutter, sewing machine operator, presser, and paste on man were learned by the class. The class then went to the Austin State School for mentally retarded deaf children and taught them the skills and vocabulary they had learned.

A second trip to the County Wide Day Program for the Deaf in San Antonio proved even more successful. Before the two classes went they made a videotape to be viewed by the day classes. The twenty children then worked on a one-to-one basis with their children teaching them the skills they had learned.

One of the facinating aspects of the program is that Career Education is Learning to Teach. First, teachers are learning new concepts and teaching them while they are still excited about learning. Teachers are therefore more effective and can identify more closely with the learner because they experience learning themselves.

T.S.D. Bank

The career program strives to duplicate real life situations by using activities that are similar to everyday problems.

A school bank was established because of the difficulty of teaching the concept of money management. The students in the department were given the opportunity to earn a play paycheck by performing a job skill they were studying. Classes took their paychecks to the bank operated by the fifth grade and made deposits. The fifth grade students not only studied the functions of all of the bank's departments but also studied the skills necessary for jobs available there. Many math concepts of a practical nature were practiced as the students kept tab on their money. A store with items the children need was also established so the complete concept of money can be demonstrated.

Community Awareness

Many field trips to various occupational locations have made students aware of the environment in which "the job" is done and have stimulated their interest. The children see the worker and appreciate what he is doing. Many jobs are duplicated in the classroom by role-playing. One class visited a shoe shine shop, then came back to campus where they set up their own shop.

On many of these visits the children have become aware of many different careers but perhaps more important many contacts with the community have made the community aware of the deaf person and his potential as a possible employee.

Skill Development

The career awareness phase was used to introduce the children to the different skills required in various careers. Students learned that many tools are used in work and that people must develop the skills to use these tools efficiently. Many projects in woodworking, painting.

sewing, horticulture, and business introduced the children to some of the skills required of the career.

MEDIATION

Media has made major contributions to the success of the Career Education project. Career Education has in turn opened the doors of the classroom for media.

Media has brought the real objects into the classroom to serve as instructional tools. The field trip was more functional when black and white photographs were made and the portable video recorder was able to bring the trip experience back into the classroom to be discussed in detail. A second studio was established on the stage of the auditorium for teachers to make their own video tapes. Students wrote their own scripts, planned the action, operated the television cameras and recorded the program. In one instance after a class had visited the bakery, they acted out the process of making bread before the television camera.

A studio produced program called "Career Quiz" featured a panel of children who had completed a career unit. Questions for the program were taken from the lesson plans of the teacher and it provided an exciting evaluation for the unit. Media is a very effective motivational force for learning and is becoming more and more important to instruction as teachers learn of its value in the classroom.

Career Education is an open approach to education. It must attempt to educate the student for life. The Texas School for the Deaf has found this approach very exciting for both teacher and child in the "awareness" phase. Plans are underway to improve this phase with new materials produced by the teachers for the children. A second group is currently planning for the sixth, seventh, and eight grade levels, "Career Exploration," which will be implemented in the fall of 1973. The deaf child must have the benefit of a curriculum that is relevant to his life. It is the job of the school to present this as a part of its overall goal.

DORMITORY PERSONNEL AS PROFESSIONALS

Peter H. Ripley, A.B., M.A., assistant superintendent, North Carolina School for the Deaf, Morganton

For as long as residential schools for the deaf have been a part of the larger picture of educating the nation's deaf, there has been a need to provide some type of general supervision within dormitories or cottages. Despite increasing emphasis on changing and upgrading academic and vocational programs, the role of dormitory personnel has remained much the same over the past several decades. There are some notable exceptions where attempts have been made to change the role of dormitory personnel to include more individual counseling and instructional activities within dormitories. In some residential schools, efforts have been made to provide a dormitory environment which attempts to serve as an extension of the classroom; however, there remains a need to continue some of the traditional roles for dormitory personnel.

A very real question to be answered is: "What role can dormitory personnel play in the overall operation of a residential school for the deaf?" As previously stated it is almost certain that many of the traditional roles will need to be continued. School budgets and staff are not sufficiently large to allow for the removal of some of the routine responsibilities traditionally and currently practiced by personnel within dormitories. There is, however, some additional responsibilities which may be carried out by dormitory personnel to extend the services of the classroom and provide a more enriching after-school environment. The role of dormitory personnel could and should be expanded to include a teaching function, a counseling function, and an input function into the overall operation of the school. Taken individually, these components can be described as follows:

(1) Given proper training there is no reason personnel, working in a dormitory setting, cannot assume a very basic instructional role. This is especially true with younger children where the individual classroom teacher often feels there is not enough time to saturate the child with experiences designed to reinforce specific concepts to be learned. Such a teaching function may be repetitive of classroom instruction or, more ideally, supplementary to the classroom program but congruent with the academic program. At the junior high school and high school levels, dormitory teaching may serve as an extension of the overall academic offering and provide an opportunity for students to be exposed to academic and quasi academic activities for which the school day and schedule cannot make adequate provisions. When considering the explosion of knowledge in the past 10 years, and the impact of "future shock" on all people, it becomes increasingly important for residential schools to provide as many enriching experiences as possible for students residing there. Classroom teachers alone cannot accomplish all the instruction which needs to take place. Dormitory personnel can substantially augment the instructional program, if properly trained. The results are a broader based instructional program and a reduction in the isolating environment which often characterizes residential living.

(2) The counseling component, as a legitimate role for dormitory personnel, has almost always been alluded to when describing the function of dormitory personnel. The problem with counseling by dormitory personnel, however, has been twofold. First, schools have generally provided a basic organizational framework which clearly designates and defines the role of dormitory personnel in the counseling function, and secondly, dormitory personnel generally lack training and background in counseling. A clear definition of counseling perimeters for dormitory personnel is essential for the success of this component of the intended role. The defined perimeters then need to be coupled with an adequate training program. When this occurs, a satisfactory counseling program can exist.

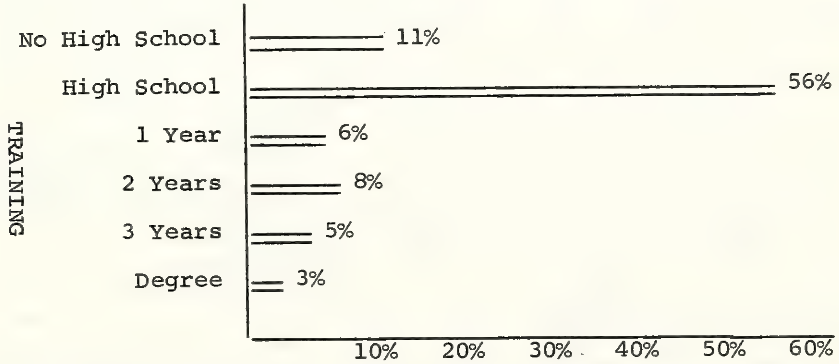
(3) The "input" role assumes a basic acceptance of dormitory personnel as a legitimate part of the instructional team. The acceptance is two-pronged, indicating that the instructional staff must look to dormitory personnel for valid information concerning students and dormitory personnel, and conversely, dormitory personnel must see themselves as a legitimate part of the total school program. When instructional and dormitory staffs see the relationship between their

respective roles, a continuity exists upon which solid programs can be built.

Dormitory personnel represent a major untapped resource upon which schools could and should be drawing to provide more optimal services to their student populations. Residential schools in the United States have staffs in excess of 2,000 people serving as houseparents, counselors, supervisors, dormitory teachers or whatever other name may be used to designate dormitory personnel. The number of people serving this function is roughly two-thirds of the number currently serving as instructors in the classroom. From another perspective, the picture reveals that a group of people—almost equal in number to instructional staffs, and having more contact with students per day than instructional staffs—are remaining generally untrained and under-used by schools for the deaf. Although the previous statement can only be referred to in a subjective way, the lack of training can be substantiated through the following statistics which were gathered by Mr. Kenneth Lane in a recent nationwide study of dormitory personnel.

Educational Status of Dormitory Personnel

(Represents 1,964 individuals, 87% report by residential schools for the deaf in the United States)



HOUSEPARENT CERTIFICATION (BY THE CONFERENCE OF EXECUTIVES OF AMERICAN SCHOOLS FOR THE DEAF)

Certificates	Number eligible	Number certified
Class C	1,235	100
Class B	284	22
Class A	245	22

APPROXIMATE PERCENTAGE OF THE TOTAL NUMBER OF HOUSEPARENTS CERTIFIED (BY THE CONFERENCE OF EXECUTIVES OF AMERICAN SCHOOLS FOR THE DEAF)—1,964 DORMITORY PERSONNEL

Certification type	Number	Percentage
Class A	22	1
Class B	22	1
Class C	100	5
Uncertified	1,820	92

The above statistics reveal a criminal lack of effort with regard to the professional preparation and upgrading of dormitory personnel.

It would not be fair or appropriate to place the blame for undeveloped resources on any one individual or group of individuals within residential schools for the deaf. What needs to happen is a general recognition of the potential of dormitory personnel with a concurrent effort to improve their training and role. It would appear that six major groups of people can serve as change agents in this regard:

1. Researchers in the field of education of the deaf.
2. Administrators of residential schools for the deaf.
3. Teachers of the deaf.
4. Parents of deaf children residing in schools for the deaf.
5. Deaf adults who are products of residential schools.
6. Dormitory personnel themselves.

Taken individually their respective responsibilites could be defined thusly.

Researchers in the field of education of the deaf are in a strategic position to provide program development packages and other data which can be used by schools in upgrading their after-school programs. The work of Dr. Doris Naiman at the New York University Center on Deafness is an example of the type of research which is available and can substantially aid the work of administrators who are sensitive to the need to upgrade the role of dormitory workers.

Administrators in schools for the deaf hold the trump cards for future growth in this area. It is the administrator who must rank priorities and make commitments for upgrading his program. Without this commitment the work of the researchers and the good intentions of others is lost in a shuffle of paperwork.

The remaining four groups—classroom teachers, parents of deaf children, deaf adults, and dormitory personnel—all must work together in outlining new directions for the professional upgrading of dormitory personnel. These four groups are very often represented in parent-teacher and counselor groups at residential schools. Such groups are often in a strategic position to make recommendations to school administrators. At this juncture the admonition must be for these groups to work in positive ways. Although problems may be characterized in a negative fashion, their solutions must be characterized in a positive fashion in order to achieve the desired results.

In summary the following may be said: Dormitory personnel represent a major untapped resource in residential schools. Despite the fact that they represent nearly two-thirds of the total number of people coming in contact with deaf students, dormitory personnel remain largely untrained and under-used. However, the picture is not so bleak as it may appear. With the proper commitment, research, and desire for change, substantial improvement can be made through the judicious use of available resources. There is a need, there is an interest in correcting the problems which have created the need, and there are resources available to solve the problems.

COMMUNICATION: KEY TO EDUCATION

Roslyn Rosen, communications specialist, Model Secondary School for the Deaf, Washington, D. C.

What is communication? If you lived all alone on a desert island, there'd be no need for possessing communication skills. Communication is an inevitable necessity in our highly developed society. Communication is to civilization as food is to people.

Just what is communication? First of all, you must have a thought and you must want to share it with someone else. You must know how to encode your thought into a tangible symbol. Then you must transmit or communicate your symbols to the other person. Now, if you two have a common symbol system (language) and working communication skills, the other person will receive and decode your message. If the relationship is to flourish, the other person must willingly respond and get involved. Communication is a two-way street.

In a nutshell, communication is the transmission of symbols or language to convey concepts. There are various ways to do this. You can talk, gesture, write or draw. The deaf have an added dimension and that is the sign language. There are several manual communication systems. An analogy may be drawn from the various styles, idioms, speech and language patterns evident and accepted in English. So is it with manual communication. It may be helpful to think of the elements of manual communication on a continuum somewhat like this:

Nonverbal communication	Ameslan, ASL, American Sign Language	Signed English	Manual English	Fingerspelling
Pantomime, natural gestures (no representation of verbal element).	Standard signs, fingerspelling, elements of pantomime (some representation of verbal element).	Standard signs, fingerspelling, a lot of English syntax (a great deal of verbal element).	Some standard signs supplemented with invented signs to visually represent the syntax of English accurately and some fingerspelling (complete representation of verbal element).	Letter by representation of English (complete representation of verbal element).

This continuum was developed to give an idea of the relationships between the various manual communication systems, but rarely does one see a certain mode used intensively to the exclusion of all others, that is, even deaf professionals employ some ASL idioms to flavor their precise English, and deaf grass roots utilize some English words and phrases when conversing in ASL.

As you travel from left to right on the continuum, the non-verbal element diminishes and the verbal element becomes more prominent. The verbal element is not present, per se, in a strictly non-verbal mode of communication, such as pantomime, even though concepts at this end may be highly developed and abstract. On the other hand, the non-verbal element can be very much a part of even the most verbally oriented manual communication systems of Manual English or fingerspelling. The Model Secondary School for the Deaf (MSSD) is in the process of developing a manual communication course paralleling the continuum. The choice of major mode of communication is dependent upon several factors such as the purpose of communication, the age and language level of the audience, the type of situation, and the overall objectives.

At MSSD, the communication policy is simultaneous communication which includes the use of speech, speech reading, finger spelling, the language of signs and hearing aids. In addition, MSSD encourages the flexible use of current communication methods and the development of new approaches and equipment directed to continuous and increasing improvement in communicative skills.

This school-wide policy for effective and skillful simultaneous communication is directed not solely to students but also to every member of the staff at school and in the dormitory. Parents and foster parents are also regarded as an integral part of the students' life and are accordingly encouraged to participate in programs designed to enhance communicative skills. All of this serves to make communication at MSSD completely visual and therefore conducive to the students' participation in the dynamics of social interaction, educational growth and personal maturation.

The communication skills of students and staff should be evaluated on a yearly basis. The purpose of the evaluation should be not to give a letter rating but to give the evaluatee an idea of where he is and to recommend a program for specific communication skill improvement and training based upon his needs and desires. Evaluation results should be used in planning teaching strategies aimed at enhancing improvement in a particular area.

How are communication skills taught to the deaf? By teaching speech and signs? Keep in mind that communication and modes are two separate entities. The purpose of communication is not to articulate words but to transmit the product of mental activity. If your sole objective is to teach a deaf kid to pronounce or sign some words accurately, you may find that he is incapable of utilizing those words spontaneously or of relating those words to concepts. But if you have encouraged him to think, to formulate and organize concepts, and to exchange ideas with you, you are apt to find a significant increase in his total communication skills.

The global area of communication development at MSSD encompasses those of mental stimulation, acquisition of language and development of skill in all aspects of communication. We are trying at MSSD to make communication something the students will see as an integral part of their lives, an essential relevance to their daily lives and school. We do this not by focusing on isolated therapy but by incorporating the techniques of communication therapy into different topics and subject areas. While communication, language and content may be considered separate entities, one cannot in actuality be divorced from the others. Accordingly, the communications department embodies language in its fullest sense in developing communicative skills, and the English department strives to enhance effective communication when teaching language. And the subject under discussion may at times be something out of a history or science book.

The optimum communication goals for each individual student are to communicate ideas as fluently as possible to as many different people as possible in as many different situations as possible, to have a realistic idea of what "possible" means, and to know what options are available should a communication barrier arise with a certain mode of communication.

You have heard the fable of a training school for animals. The eagle was a Blue Max pilot but he was a track team dropout, the rabbit's claim to fame lay in his running skill but he couldn't swim across a puddle, and the duck was a seven gold medal swimmer but a lousy pilot. So that program focused upon overcoming their weaknesses to the complete detriment of their individual strengths.

We try to keep in mind the moral of this fable when we work with our students. Weaknesses should not be emphasized to the detriment of possible, potential and attainable strengths in important areas such as logical thinking, effective communication and language skills. We capitalize upon abilities, visual skills for instance, to strengthen latent skills in other areas. This implies that we accept the deaf student for what he is, but also that we instill in him the belief that he is capable of making significant progress in his educational and social maturation.

Education must be keyed to the individual student's needs. The learning requirements of the student, not his etiological, medical or cultural classification, should determine his educational program. For optimum results, MSSD offers a complete array of programs and services, a wide spectrum of methods to meet the individual student's needs. Flexibility and individualism are important words. Students have been fitted, too often in the past, into preconceived programs rather than the other way around.

This brings to mind the time when a group of us deaf people and a hearing friend went out for dinner at a resturant. Hands flew all over the place. Finally a poor, bewildered waitress made her way to our table and our hearing friend started to place our orders. She looked at him and stammered, "Huh? Will you write that down, please?" This may be a humorous incident, but it serves to illustrate how preconceived concepts can interfere with effective communication and undermine educational and social progress.

In the school, communication of ideas, through active participation and involvement, and open discussion of various subjects should be encouraged. If the teacher finds himself doing all the talking, it should be kept in mind that classroom discussions are conducted by the same rules as for ball games, meaning rapid intervention and extraction, responsiveness and aggressiveness. So try to keep the discussion groups small and the chances for participation huge. Communication and comprehension of the subject rather than nit-picking of grammatical or communication errors are important at this point.

Utilize a variety of resources. Keep in mind that education isn't necessarily confined to the classroom. Field trips and natural and community resources are great communication-stimuli. Visual aids can be used to the maximum. The books and materials available can be used creatively.

So-called cut and dried subjects, deftly handled can come to life. For instance, take history. The Civil War. Should battle dates be memorized when they are available in reference books and the students know how to obtain the needed data? Instead, concentrate on the humanistic aspect of the war. Discuss why civil wars within a nation are so destructive. Turn back the clock and have a student put himself in the shoes of a Northern soldier who spies a Southern soldier across the river. He lifts his gun and aims to kill. Suddenly he realizes that the soldier is his father, fighting for the opposite side. Should he shoot anyway or not? Why or why not? What would the consequences be either way? Get the students involved. With effective communication, education can be made stimulating, dynamic and relevant. It can be made as big as life.

When you communicate with a student, you are simultaneously serving as an example for him. You can expose him to new communication techniques, language patterns, idioms, vocabulary and slanguage. Interject colorful and contemporary expressions such as "Oh Wow", "Bug off" or "Groovy" when you talk with him. Make sure your facial expressions and body movements serve as effective substitutions for vocal inflection. Think about your objectives and the school goals. When you communicate with the student, is that communication skill being used or is it being taught? Are corrections or reinforcements incidental and occasional or are they in line with your scheme of things?

Offer corrections in a natural way with no fuss or stress made unduly on errors. Think of a jar with a narrow neck. It is filled with marbles. You can barely get your hand in. Your job is to take the marbles out of that jar. If you grab a handful of marbles, there'd be no way for your hand to get out. Now, try removing them one by one. It will demand more time and patience from you, but your chances for success are definitely improved.

Go one step at a time. Start with two or three specific communication or language problems. Discuss the rationales for corrections or alternatives. Be sure they are understood by the students. Hold the students accountable instead of your always having to tell them. The objective is to instill in them the skill of thinking independently, an understanding of language, and the ability to communicate clearly. These skills will remain with them long after they leave school.

You can lead a horse to water, but you can't make him drink. The students must be encouraged and motivated. They must be turned on. Favorable situations, such as positive reinforcements, conducive environment, rapport with staff, open lines of communication and successes in learning will keep the students motivated. Remember that even the simplest organism learns to withdraw from pain. Be able to distinguish between disability and disinclination.

Education doesn't have to be like a bowl of spinach you reluctantly down just because you've been told it's good for you. With a gourmet's touch, spinach can be made not merely palatable, but absolutely delectable. Education can be a delectable happening, too. School can and should be challenging, stimulating and enjoyable.

Innovative programs at MSSD seem to foster that environment and freedom so essential for relaxed communication and motivated learning. First of all, the student is aware that *he* is responsible for his education, that he competes with himself, and that the reason for learning is not for his teacher's sake but for his own. The student is given a wide choice of courses from which to select those that intrigue or motivate him and/or meet his needs. An individual modular schedule is designed to meet the student's particular requirements and desires. Some of his classes meet in small groups and others are basically individual where the student works with the teacher on a one-to-one basis or he may work by himself on ungraded individual packages which enable him to go at his own pace, enlisting the aid of the teacher when necessary, getting instant feedback and reinforcement. Course units or assignments are usually developed in sequential order, have attainable short-term goals and often insure a high degree of success.

The school day at MSSD starts with a fifteen-minute doughnut and rap session in which everyone is involved. This is followed by a fifteen-minute advisor-advisee meeting during which school news, current events and announcements are brought up to date and opinions or information are exchanged. Students and staff members get together during free times and sometimes at lunch time. Conversation is uninhibited. Everyone is encouraged to utilize the simultaneous method of communication so to include others in the rap session. For instance, if two hearing persons are conversing and a deaf person comes within eye-shot, they should be encouraged to add manual communication so that the deaf person feels welcome to participate in their conversation or he may pick up parts of their conversation just the way a hearing eavesdropper would. And vice versa. No topic is considered off-limits for students. Nor place, too, for that matter. A student is as likely as a staff member to be in an administrator's office, exchanging small talk, problems, or matters of worldly importance with him. This open and relaxed atmosphere is carried over to the dormitory after school hours where organized and voluntary programs are offered.

The opportunity and freedom to communicate must be part of the on-going school environment. Constant interaction with staff members means constant exposure to communication and language models and a consequent sophistication of the students' communicative skills. It also enriches the students' understanding of what is happening around them and in the world and enhances their social and mental growth. This interaction in turn does wonders for the staff members' communication skills and increases their understanding of the meaning of deafness. The dividing line between staff and students diminishes as they come to regard each other as human beings with needs, abilities, opinions and dreams.

Communication occurs simultaneously on three levels. They are analyzed and identified as the following three areas:

1. What is said:

This refers to content. It is whatever one is teaching or trying to get across. The subject can be anything under the sun. For educational purposes, whatever is communicated should be comprehensible, related to immediate objectives and relevant to life outside the controlled situation.

2. How it is said:

This refers to the vehicle for conveying the content, specifically the mode or method, and how the content is clothed, specifically the language. It is vital to have fluent expressive and skillful receptive abilities. It is important to be able to communicate effectively.

3. Why it is said:

This refers to the humanistic aspect of communication and can be considered the base of the educational system and the key to education. It means the interest and belief in mankind, the desire to share and form honest relationships with people. This establishes the environment, rapport and motivation essential for true educational and social progress.

All together, Total Communication at MSSD means Total Involvement. It is the teacher's responsibility to be stimulating and dynamic. This motivates the student into his responsibility of learning. Education is like a marriage. Effective communication and good relationship must be evident between teacher and student if the partnership is to thrive.

A PUBLIC SCHOOL PLAN FOR REGIONAL PROGRAM AND CURRICULUM DEVELOPMENT

Kenneth L. Rislov, coordinator for hearing impaired, Northwestern Illinois Association for Hearing, Visually and Physically Handicapped Children, Evanston, Ill.

Curriculum is the school, the program, the organization, the staff, the activities, the delivery systems, the learning opportunities, the developmental activities, the parent involvement, the course of study, the educational objectives, the facilities. In a nutshell, curriculum is everything related to the education of a child specifically, here, a hearing impaired child. We usually think of curriculum as the written guide of learning activities that we feel must be accomplished before a child is educated. We usually assume there is a school, staff, and delivery system firmly established. What does one do to develop an effective curriculum (educational program) when there are more than 1500 children scattered in uncoordinated classes throughout a state of 1300 school districts? This is the dilemma facing the schools, parents, and children in the State of Illinois in the early 1960's.

This paper will give a skeletal outline of the activities involved at the State level and the subsequent parallel activities of one of the local programs from 1964 until the present.

1964: The initial visible activity began with the Governor's Commission on Children taking on the task of studying the existing services for hearing impaired children in Illinois and making recommendations for improving programs both at the program level and the legislation level. The Commission established a working committee made up of representative professionals, parents, deaf adults, administrators and consultants.

The initial assessment of services to hearing impaired children found most of the children in the State in inadequate, uncoordinated programs. Only in a few instances, one being the Illinois School for the Deaf, were children receiving comprehensive services. There was no organized identification program, no diagnostic services in public schools to evaluate hearing impaired children, no parent services except a one week institute for parents of preschool deaf children, and no established curriculum guides for teachers to follow.

Though the Commission of Children's final report, "A Comprehensive Plan for Hearing Impaired Children in Illinois," was rather detailed, some of the most important recommendations were:

(1) Establish 13 regions for coordinating educational services for the hearing impaired. Components of each region would include:

- Identification.
- Educational Evaluations.
- Coordination and Supervision.
- Educational Services for Children 0–21.

(2) Establish two high schools, one at the Illinois School for the Deaf and one in the Chicago area.

(3) Develop post secondary and adult education programs.

1967: The first activity initiated by the State Office of the Superintendent of Public Instruction subsequent to the Commission on Children report was to organize the Directors of Special Education in each region into Planning Committees. Each Planning Committee established an organizational structure and joint agreement that would enable joint funding and coordination of their activities. Most of the regions were established by 1968, however, some were non-functional until 1969 or 1970.

1968: The State Office of the Superintendent of Public Instruction encouraged rapid development of identification and diagnostic services by offering Title VI ESEA funds to each region. In cooperation with the Department of Public Health, technicians were trained to provide screening services. Audiologists, consulting otologists and educators were available through Title VI funding to provide an evaluation for medical and educational follow up.

1970: The Illinois Legislature passed the Child Hearing Test Act which mandated the Department of Public Health to permanently establish identification programs for preschool and school age children Statewide.

1971: The Illinois Legislature appropriated $100,000 to provide planning grants to each region to develop master plans for comprehensive services for the hearing impaired.

1972: The Illinois Legislature appropriated $100,000 to compile all master plans and determine the financial need and possible legislative needs to implement the regional programs of the future.

1973: A consortium of organizations serving the deaf, Illinois Association of the Deaf, Illinois Parents of the Hearing Impaired, Illinois Teachers of the Hearing Impaired, and the Illinois Administrators of Special Education are working with the Office of the Superintendent of Public Instruction to develop needed legislation and funding for the implementation of comprehensive program plans.

Though these are the major visible milestones in the establishment of an organization and service delivery system, there have been thousands of hours of committee activity and internal planning to accomplish these State level goals.

The ultimate goal of State level planning as described above is to deliver services to the consumer. Deaf children can only benefit from such planning if there are sincere parallel activities on the local and regional level. The Northwestern Illinois region, one of 13, will be used here to show what activities were initiated by each of the listed Milestones of State activity.

1964: During the time the Commission on Children was deliberating the needs of deaf education, school districts were developing their plans for delivering services for general special education as mandated by the legislature. Most of the plans developed cooperative agreements between a number of schools. Not knowing what recommendations for hearing impaired would come out of the Commission on Children, each Special Education District plan submitted to the Office of the Superintendent of Public Instruction stated the District would cooperate regionally.

1967: Directors of Special Education from ten counties began to meet to develop a cooperative agreement to provide services to hearing impaired children. This agreement consisted of an organizational structure, financial commitment, and a statement of purpose which included all aspects of services to the hearing impaired; identification, diagnostic evaluation, placement, educational supervision and school consultation.

1968: Title VI ESEA funds were made available to allow for a more rapid process of regional development. A director was hired to begin the coordinating process. The first activities included hiring technicians to provide preschool hearing screening services and to develop inservice workshops to acquaint the region with the new program. Subsequent to the initial start, a coordinator, two supervisors, two audiologists, and a psychologist have been added to regional staff. The teaching staff in the entire region has increased from 28 to 44 with the number of deaf and hard of hearing children increasing from 150 to 275. Most of the increase in teaching staff and numbers of children has been in the hard of hearing area. The identification program, both preschool and school age has "discovered" hundreds of children previously unreported to the schools or special education. The best estimates at the present time indicate perhaps .75 to 1% of the school population needs some degree of intervention to succeed educationally. The Northwestern Illinois region has only begun to scratch the surface of serving the hard of hearing.

1970: With the passage of the Child Hearing Test Act, the State Legislature mandated the Department of Public Health to provide identification services Statewide. Since most of the screening services were being provided through the regions or schools, careful planning for a smooth transition was needed, grants in aid were provided to ensure continuation of services during transition, Rules and Regulations were developed by an Advisory Committee and the statutory Hearing Conservation Committees were established. Presently the Hearing Conservation Committees representing all public and private agencies are meeting to develop the detailed delivery system for each region.

1971: The $100,000 appropriated by the legislature for master planning for the hearing impaired was distributed evenly among the regions. The Northwestern Illinois region established a committee consisting of 35 members including parents, deaf adults, teachers, special education directors and supervisory and diagnostic staff. Using previously completed internal studies by the staff and various committees, the Commission on Children report, and their own intensive study over a six month period, the Master Plan Committee developed a proposal which calls for a continuum of services for deaf and hard of hearing children ages 0–21. The proposal is summarized in the last section of this paper.

1972: The State Legislature approved an additional $100,000 to develop a State level report which was to be a compilation of all 13 regional plans. The task was given to an educational consulting firm through open bidding. The final report recommended enabling legislation to provide 100% funding of the educational program as well as construction of facilities, a realignment of the 13 regions, reorganization of the administrative structures, and a detailed listing of services needed for varying degrees of intervention. The consulting firm studied each document that had been prepared up to and including the regional master plans. In addition, they interviewed regional supervisors, teachers, directors, parents and deaf adults before completing the report.

1973: At the present time, regions are working individually and collectively with the consortium of organizations serving the deaf to implement the master plans. Some of the recommendations can be accomplished without major reorganization or financing. Other changes such as developing regional schools for the deaf will necessitate enabling legislation and additional financial support. To this end, regions and organizations are working together with the Office of the Superintendent of Public Instruction to develop appropriate legislation for 1974.

Meanwhile, back at the child level, teachers are working on curriculum guides that will provide the backbone of the instructional plan. The curriculum guide is taking on a unique form in that each behavioral objective is written on 3x5 cards and catalogued developmentally in each subject area. Each objective card will have several cards to suggest possible activities and resources. The guide promises to be very dynamic and responsive to changing needs since with little effort one objective or a whole section can be changed by exchanging cards rather than reprinting a book. It also allows for development of "mini-courses" that may be used only occasionally and usually do not appear in a prepared curriculum guide. The future addition of an evaluation system, will give parents and future teachers an exacting picture of where each child is in relation to his prescribed curriculum.

It is a complicated puzzle, each part being shaped individually and by different people. The parts will never fit together unless there is a major coordinating effort to make all parts compatible. Every person, organization and agency must carry out its responsibility to the 100% level or the educational puzzle for hearing impaired children will again be fragmented.

With mandatory special education and zero reject legislation a reality of today, it is essential that a coordinated planning for the education of hearing impaired youngsters be accomplished in every state. Some states already have done commendable jobs. State and residential schools are an essential part of a network of services for the deaf. It is, therefore, extremely important for the state and residential schools to take an active, if not an initiating role, in planning a network of services which includes public schools. If this is not done, decisions will be made by people with little knowledge and little experience in working with hearing impaired people. The educational puzzle will again be incomplete and very likely, an old and essential part will suddenly be missing.

SUMMARY OF RECOMMENDATIONS FOR THE DEAF

A regional school for the deaf should be established in the center of the regional school population.

Establish programs for Parent-Infant Education, preschool, primary, intermediate, and junior high deaf students.

Cooperate with the Illinois School for the Deaf and other state high school programs to serve the high school needs.

Develop diagnostic services for the regional school with staff that will also be available to the hard of hearing programs.

Evaluate all children with a three frequency loss of 60dB or greater.

For the few children who live too far from the Regional School to travel each day, cottage care facilities should be set up for five day care of the children. This facility would serve a minimal number of children.

Transportation lines should be managed by the regional school with approximately five direct routes to the school.

Develop an equitable method of financing the program that will encourage referrals and insure equal participation.

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PERCUSSION INSTRUMENTS—TOOLS FOR CREATIVITY

Virginia W. Schatz, rhythm teacher and fine arts consulting teacher,
Western Pennsylvania School for the Deaf, Pittsburgh

In the convention program this presentation was listed under the very general title "Eurythmics", directed specifically to the Upper Primary age group. I must confess that my original intent was to extend that generality to include *all* age groups. How could I talk about a program as many-faceted as ours at the Western Pennsylvania School for the Deaf without telling you "the whole thing!" However, it became evident almost immediately that in the limited time available I could share with you only one small segment of our eurythmics program, the work with our percussion instruments and movement.

Percussion instruments approached as musical instruments possessing distinctive tone qualities and tremendous expressive potential are a great stimulus to rhythmic movement. They are not used as an end in themselves but as exciting, joyous, tangible tools for learning the basic elements essential for more natural speech production—duration, pitch, intensity and quality—and for learning them through pleasurable, creative rhythmic experiences. My methods of work are based primarily on the principles established by Miss Henrietta Rosenstrauch, teacher of Dalcroze Eurythmics at Carnegie-Mellon University, then Carnegie Institute of Technology. The uniqueness of her treatment of percussion lay first in the appreciation of each instrument at its proper value, and second, in giving the chief place to improvisation, both in playing and conducting. (Rosenstruach, 1960).

Percussion instruments are used in Kindergarten and Primary to enhance the children's natural movement, the rhythmic movement of his every day activity. Every child has a natural capacity for rhythmic expression. "Rhythm is so basic to life itself, children are quick to know it, feel it and respond to it." (Rowan, 1968). In their daily activities, deaf children are constantly developing their rhythmic capacities, combining movements used in doing or perceiving or imagining into rhythmic patterns, although unaware of their rhythmic implications. Percussion instruments, used to stimulate or energize natural movement, give it a highly visual rhythmic order so necessary for the young deaf child. Vivid, energetic, exceedingly pleasurable rhythmic movement and percussion experiences can be stored by the deaf child. He can begin to build an inner rhythm concept.

The tape you will see is made up of brief episodes excerpted from various class experiences using percussion instruments. An attempt was made to put these experiences in a sequential order showing the steps in the development of the children's understanding of the character and tone color of each instrument and the influence this understanding has on the type of movement or rhythmic activities. The steps are far from complete. Lessons demonstrating specific work with speech and language were deliberately omitted because they have been well-documented in two films titled *Learning to Feel a Poem* and *Expression Through Physical Movement*, produced through W.Q.E.D. in Pittsburgh as part of a series of 10 films in Language Arts for use through Captioned Films in training teachers. These films are readily available through the media department of Western Pennsylvania School for the Deaf. Omissions were made of other steps because no classes were working in those particular areas. Let me remind you again—precussion is just a small part of the total program. Some classes may skip a year, even two, without a concentrated unit in percussion in which they would explore and discover new qualities of the instruments. The children in the tape have developed an understanding of duration and pitch. They are beginning to think about form. They will work with elements of intensity (tempo, accent, dynamics) and quality (theme, mood) in Middle School and finally, in the Junior High School classes, they will work in ensembles, using the piano and other melodic instruments for improvisations.

The first children you will see have had many previous experiences. They rolled balls to the gong, waiting to pick them up until the drum sounded. They walked, skipped and ran to the woodblock and the hand drum. They pretended to put on boots and walked in the deep snow with big, slow steps to the gong or cymbal. They played out stories, hopping like rabbits to the woodblock and hurrying home when the drum sounded the dangerous, heavy footsteps of the hunter—or the gong sounded the beginnings of a storm. They watched leaves and snowflakes gently turning and falling and imagined themselves leaves or snowflakes whirling and swaying to the triangle and finger cymbals. They are now being led into the first step of the actual learning process, discovering information about the instruments upon which they can build future concepts. Attention has been focused on the physical differences between the gong and the big drum and the difference between what they feel when the instruments are played. Ideas are developed through contrasts, happy—sad, strong—weak or tired, asleep—awake. The question changes from "how do you feel?" to "what does the drum or the gong say to you?" Then come the beginnings of abstract movement, up—down, in—out, move—stop, etc.

Show Tape: 1. The children sit with their backs to the drum and the gong, eyes closed. The instructions are, "Clap what you feel." The reaction to the drum is a short clap; to the gong, hands clasped together, moving to the side as long as they feel the vibrations. I may incidentally use the terms "short" and "long" but I do not teach them.

2. The children are on the floor playing that they are asleep. The gong plays gently and the children quietly roll and turn, some curling up, some wiggling toes. On the drum sound they suddenly awake, startled by a sound.

3. The children, having decided beforehand what their position in space would be (lying on the floor, standing, squatting, kneeling) move to the gong and drum. They have been instructed to be "different" not only in the sense that the gong and big drum demand a different movement but also to be different from each other. They are involved in creating new images of themselves in space. First, their movement ideas are limited, tenuous, but for short moments they dare to experiment without needing the support of eye contact with me or the instruments. Notice Darren rolling away from eye contact and Toni Jo cautiously turning. The terms "high" and "low" are incidental, still not taught.

Did you notice that you can hear the gong much longer than the children can feel vibrations? Each child needs much experience playing and feeling the gong and drum himself to be aware of the actual length of the sound. Most of the time the children will be drawing on "remembered experiences" with the individual instruments. The only instruments my children "hear" with any regularity or sureness are the big gong, the big drum, the woodblock and the hand drum when it's struck with a mallet. The children get lots of opportunities to play the instruments when they begin abstract movement. Their first ideas are limited so I move with them quite often, one child playing, the others following me. When I see an interesting variation or new idea from one of the children, we all follow the lead of that child. After this we branch out into individual and different movement. We also don't stay glued to one place. In much of the movement with percussion you'll see in the tapes, the children remain in one area. I had to choose between unrehearsed lessons, easily within the range of a camera and requiring little change of direction or carefully staged activities where the cameraman knew exactly when and where the children would move. I chose the former.

To build up experiences playing all the instruments, we first play games that do not require the group to be rhythmically precise. For example, instruments are placed beside large cards depicting the family of notes, instruments of short duration beside the eighth note (baby) the quarter note (mother) and those of long duration beside the half note (father, who takes big, strong steps). When the children recognize the particular note value played, they can run to the cards, pick up an instrument and play that particular note. This is also, of course, good reinforcement of their knowledge of basic note values.

Show tape: 4. This is part of a file and signal game showing first experiences of playing the hand drums in an ordered rhythm with an expectancy of precision. The children are divided into two groups, each having a leader. On a signal, the *last* person stops and begins to play his drum while the rest of the column continues to move. This continues until all have stopped and then on the signal, the columns form again in reverse order. We play this game using all the basic rhythms—walk, slow walk, run and skip. Notice that the children do not play the drums and move at the same time. This demands too much coordination first of all and secondly, the signal for stop and go would be more difficult to perceive. The children move easily in all directions away from the piano because they feel confident that they are in contact with me through the vibrations felt on the hand drums. They turn to me when they are playing the drums because they still need contact for accuracy. Playing the drums well does not come naturally to the children. Many classes of games to develop technique are necessary.

5. In this stick game I have given the children a rhythm pattern, quarter note, quarter rest, quarter note, quarter rest which they recognize and clap as walk, wait, walk, wait. The game instructions are for the first person to play on his partner's stick on walk and then place his stick in a new position and be ready for his partner to play on the second walk—play, place, play, place, in turns. Kenny and Lindi Sue play very successfully until their ideas get too involved. Notice that I stopped the game when they started to get out of time. I do not want to reinforce inaccuracy, even though praising the experimentation that caused it. Brian and Sherri were not feeling the pulse that I established. I often stop like this and back up to let the children determine and set the pulse themselves, developing accuracy from reinforcing the child's own inner sense of the rhythmic beat. Most of the time I play a tuneable dance drum to begin the games and go to the piano after I'm sure the children understand the form the game is to take. I retaped this game two days later wanting a clearer picture and got the bonus you see now. Brian and Sherri, being surer of their compatability in movement, are able to take my suggestion of a faster pulse and handle it pretty well.

We've made an interesting extension of this game using the big drum for the quarter note and the gong as a half note, each partner taking turns striking on the quarter but both partners moving in interesting space on the half note. The movement gets very lovely because the children inevitably use the stick as an extension of the arm to reach out and stretch the body on the slow movement.

I want to show you just a short segment of a lesson with children taped two days before school closed, recalling some imaginative play from our classes in March when we had some nice windy days. We had moved from the much easier to do common situations like flying kites, walking in the rain with umbrellas, etc., and had begun to think about what actually happens to each one personally rather than to an object held or carried. It's important to move to different situations for each one in order to discourage limitation or reliance on each other. In the tape you will see the developing ideas firmed up on the board. This serves several purposes besides giving the children additional exposure to language patterns. Writing down the ideas solicited from the children helps to guarantee that it's their ideas, not mine being imposed on them. If I write something they don't agree with, they quickly tell me.

Show Tape: 6. My introduction to the lesson begins with my observations about the wind in the spring and the different ways it blows. I accompany my story on the gong and the children begin immediately to react very naturally to the story and the corresponding soft and loud accompaniment on the gong. We talk about what the children will be doing when the wind blows them. Andrea wants to watch birds, Frank has a kite, David is playing with his rabbit and Beth is at a ball game. When we start to play, I can't see Frank's kite because he doesn't see it himself. I don't see Andrea's birds either until she really looks up and sees them. It is so important for the children to be really involved in their play idea not only for better and clearer mime but also to help lessen their dependence on visual contact with me or the instruments. When the children overreact, I bring them all back again to feel the gong and determine when I play "much" and when I play "little".

We would work much more on this. I used it because it had been an uncompleted unit and you could still see some of the problems in working it out. What happens after the wind blows you? Do you feel differently? Would you go back to the same thing you were doing before? All these questions and more would be talked about and we would probably end up with individual improvisations accompanied by both the piano and the gong and perhaps other instruments.

The next portion of the tape shows an activity that is the closest I get to the traditional rhythm band. I see very little value in everyone having to keep time to music which in most cases is far from enriched by the addition of percussive noise. My justification in this activity is the demonstration of the children's independent thinking and knowledge of both the rhythm values of the notes and the basic sound duration of the instruments. The happiness of the children in their own achievement and the satisfaction easily attained is of course another good reason to include the activity as one of the steps.

Show Tape: 7. The children are grouped around the piano, playing the instruments that make short sounds on one side and playing the instruments that vibrate longer on the other side. They are working independently in their music books, orchestrating a song they played just once before in class. (This is a first experience for Donald, playing the hand drum.) Notice Karen as she moves her mallet from book to instrument, back and forth, so that she is sure to stay in rhythm.

Before you see the next groups of children I'd like to call your attention to the charts showing the structure that finally evolves from the trial-and-error process of feeling the vibrating instruments. Initially the instrument is struck only once and classified as to short or long. Physical relationships that the children can see (similar materials, appearances) are pointed out. When structuring for pitch, the instruments are again struck only once, although in the experimentation that follows, the children quickly free the instruments using delightful rhythmic inventions. This structuring process is time consuming because each child must make his *own* discoveries. Unless he personally experiences the character of each instrument he doesn't really internalize what he has learned. The process may go on over a period of months or even years but because the children know that each new bit of information leads to new experiences they remain highly motivated and often display a rhythmic memory far in excess of their academic classroom performance. They do not forget the relationships previously established and are ready to move to the next step easily, bearing out Jerome Bruner's statement that grasping the structure of a subject is understanding it in a way that permits many other things to be related to it meaningfully. (Bruner, 1961).

Show Tape: 8. These children are being introduced to the possibility of another classification for the first time. They are asked only to tell if they feel "much" or "little" when I play the gong and the small cymbal. Before they begin, the possibility that difference exists within the total grouping, "long" is suggested by calling attention to the difference in the sizes of the cymbals. John will not be told whether he has differentiated correctly until all have tried. This helps to encourage each child to think for himself. The vocabulary for pitch will not be used until the children have experienced high and low space in movement.

9. Now, these children demonstrate the spatial experiences that preceded the terms "very high, high, middle, low, very low". I used five space relationships originally because my instruments happened to divide that way and then found that this also served to open up more vertical space. I consider all the percussion to have the quality of pitch, not only just the melodic percussion such as xylophones, tuned bells, etc. Notice that we have no tambourines. The jangles interfere with the perception of vibrations and cloud the true pitch of the instrument. Assuming the corresponding position in space beside the instrument reinforces the concept. The children find the instruments that satisfy *two* qualities, i.e., short and very low, and improvise a rhythm on the instrument, in this case, the big drum.

10. Working in groups of two, one playing and one moving, the children improvise movements and create in the style and gestures suggested by the instrument. Except for Darren, they stay in their respective space relationship.

We would extend this game eventually and reverse the improvisation to have the instrument follow the movement and in particular, we would free the movement from both vertical (pitch) and horizontal constraints. This exercise is relatively new for these children and they are still very dependent on visual contacts. I wish now I had taken the extra time and tape to try this activity with their eyes closed. You'll have to take my word for it that with experience they would become most independent.

All the instruments have something to "say". In the next portion of the tape we explore that idea by going on family visits and "speaking" with our instruments. We start this activity by each speaking and playing simultaneously but so often the rhythm language of the children exceeds their spoken language and they become frustrated. It's more successful if we plan situations, use our inner language to generate rhythms and *then* talk about how we felt, what we thought and express it verbally.

Show Tape: 11. The drum family is visited by their friends, the triangle and woodblock. The friends also visit the cymbal family and Grandfather, the gong. Look how Jeff puts himself into the role. These children are responsible for knowing the names of the instruments. Randy thinks he has made a mistake because he spoke with his instrument although I had said we would not this time. It really doesn't matter. The joy of percussion used improvisationally is that once you've mastered the basic structure, you can't make a mistake. The child's idea is always acceptable, maybe to be improved but never discarded. Marci conducts beautifully. She uses a staccato stroke for striking the long instruments but draws out the return to serve to remind herself of the length of the sound. The stroke, for all instruments, is always staccato. The instruments are always played from the same position in the semicircle, reinforcing the relationships the children have structured.

Most children will first feel that they must include every instrument in the orchestra in their improvisations. They will hesitate or stop between each instrument trying to decide what to choose next. One of the ways to help the child is to ask him to select only three or four instruments to use. Then, he can either ask each of the players to give him a rhythm idea and then use their ideas in any sequence he chooses or he can give each player his own idea of a rhythm suitable for them and use those ideas. This activity requires the children to build rhythm memories. We write the rhythms in phrases on the board, holding the inventor of the rhythm to his pattern once he has truly established it. It's not easy for the deaf child to think in music phrases when he has no aural clues such as cadence or rise and fall of a melodic line.

This next class is a group of children with many learning disabilities and yet they have had success equal to the other children with percussion. We had to work a little slower, review oftener but I expected and got the same mastery of skills and understanding as the others. We are building a percussion composition in the tape, only the third such lesson that we've had. I purposefully held off doing any more so that you could see a true example of their work.

Show Tape: 12. I have started the composition with a phrase, notating and orchestrating it. Mannie repeats his rhythm so that I'm sure he really has it and then surprises me by wanting to put it on the board. I often do rhythm dictation with the children but I had not done so with this group. To save time the tape jumps to the completion of his phrase and now he determines the form he wants. I write his phrase choices, A, A, B, A, on the board in such a manner as permits me to draw a design or shape around them, to show the children an example of what is meant by "form"—how our composition is put together—the overall framework or design.

13. This last short glimpse is of some seventh grade boys who just finished a percussion unit in which they experimented with melodic percussion. The conductor—artist (he also plays the gong) is putting together some motifs previously decided on by each player. Chip is using his forearms to play the piano. Wesley changes both style and dynamics on the xylophone (a hand made folk instrument from Ecuador).

Between the last two groups is a time space of three to four years. In the Middle School, the children do some of their most sophisticated movement. Time and again, they go to the percussion instruments to color and clarify their dramatic images, to set moods, to emphasize and accent their dance forms, to organize and shape their rhythmic plays. The older children also enjoy another kind of ensemble experience, taking a favorite song and orchestrating it to add vitality and interest. One of our open classroom groups last year wrote a new school song, orchestrated it and composed an original dance to it. The orchestration did not follow the regular rhythm of the song but complemented the ideas expressed in the words of the song. In the sense that these children and others like them have continued to seek out the percussion instruments to invent and create something novel and of value to their social group and school community, percussion instruments have become tools for creativity.

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GALLAUDET COLLEGE "PRESENT AND PROSPECTS"—UNDERGRADUATE PROGRAM

John S. Schuchman, dean of the College, Washington, D.C.

In the time allotted to me, I would like to talk about Gallaudet College *today*, specifically, the undergraduate program. I emphasize the word *today* because Gallaudet College is a much changed place from 20 years ago; its buildings, students, staff, and program have all changed and continue to change. Change, which I think, reflects a quality program for most deaf students who seek a collegiate education.

In order to explain what I mean by a quality program, let me draw an analogy from a television commercial which is prominent in the Washington, D.C. area. This particular commercial speaks of a local bank not as an ordinary bank, but as a "full-service" bank. In a similar vein, we view Gallaudet College not as an ordinary college, but as a unique institution with a "full-service" program designed to meet the needs of deaf students. Although it is impossible to mention all aspects of our "full-service" program, let me refer to a few of them.

1. *Simultaneous Communication.*—Most obvious and most important is Gallaudet College's commitment to the concept of student-teacher communication. A deaf student has a right to communicate directly with a teacher trained in a substantive discipline—in effect, this means that our teachers must be able to handle "simultaneous communication" skills in order to handle the dialogue and advisement that is necessary to effective learning. In the last few years, our faculty has required that teachers must demonstrate proficiency in simultaneous communication skills to the satisfaction of a student-faculty panel. The fact that several teachers' contracts have not been renewed for failure to meet the proficiency test attests to our commitment to the importance of communication between student and teacher.

2. *Equal Opportunity.*—A "full-service" program for deaf students which does not include deaf persons in the administration or staff is a farce. Of the seven chief administrators who report directly to Gallaudet President Edward C. Merrill, Jr., two are deaf themselves. Of a faculty of 163 individuals, 44 are deaf. Gallaudet College actively seeks qualified deaf candidates for positions throughout the institution. Unless students can see successful deaf teachers and staff who make decisions and who serve as models, there can be no "full-service" program.

3. *Integration.*—We feel that "full-service" requires that a deaf student have a choice about integration. I hope that we never lose sight of the fact that integration is a means to an end and not an end in itself. If integration does not support the improvement of the quality of education for deaf students, it should be discarded because when integration becomes an end in itself, it is destructive of the needs of most deaf youngsters. Although most of our students take the bulk of their work on campus, we provide choices for our students in regard to the amount of interaction with hearing students.

a. *Consortium.*—Last year, Gallaudet College joined the Washington area Consortium of Universities and Colleges. As a result our students have the choice of cross-registering for one or two courses each semester at any one of several major universities in the District. With the aid of interpreters, note-takers, and our regular faculty as tutors, students can partake of as much "hearing" classroom environment as they wish without the risk of total immersion.

b. *Exchange.*—If they do desire total immersion, a student can register for a semester at Oberlin College (Ohio) with whom we have established a successful student exchange. We are presently negotiating similar exchanges with other colleges.

c. *Integration (hearing and deaf) on campus.*—In addition to the consortium and exchange programs mentioned previously, we try to integrate our campus with special programs wherein we bring hearing students to campus for a semester or year's residence. Although due to its newness, our program results are anecdotal in nature, we feel that interaction between deaf student and hearing student is facilitated when it occurs on the deaf student's so-called turf. In sum, the full-service program at Gallaudet College is one which provides for integrated settings, but settings about which the student has a choice.

4. *Leadership and Cultural Opportunities.*—

a. As we all know, much of the learning which occurs on any college campus is a result of non-classroom activities. Although the more than fifty student organizations sometimes distract students from their classroom pursuits, the organizations provide students the opportunity to develop organizational and leadership skills which will be put to use when our graduates later assume community responsibilities.

b. In addition to student organizations, the college has an extensive athletic, cultural, and dramatic events program. Instead of token representation in a few sports as would be the case for most deaf students on a hearing college campus, our students participate in 11 sports with nearly half of the eligible male students as members of one or more of the teams. Members of the Mason-Dixon Conference and the Potomac Intercollegiate Conference, the college also offers an extensive intramural program.

c. Supplementing a variety of speakers and programs brought to the campus by our cultural affairs committee and the Continuing Education Forum, the college presents two or three play productions each year. This year, the Drama Department's presentation of "Antigone" won recognition as one of the top ten national representatives for the American College Theatre Festival held at the John F. Kennedy Center in Washington, D.C.

5. *Placement.*—Contrary to the prevalent myth that liberal arts colleges are not interested in placement, Gallaudet College has an active placement service. The college maintains placement files for all seniors, sponsors several job fairs with government agencies and private employers, and conducts workshops on job interview-techniques.

Although data for this year's class is incomplete, in 1972, our bachelor degree students were employed as follows:

	Percent	Number
(a) Government service	24.22	39
(b) Graduate study	23.60	38
(c) Teaching	13.66	22
(d) Private industry	8.69	14
(e) Homemakers	8.69	14
(f) Rehabilitation counselors	4.96	8
(g) Residential school counselors	4.96	8
(h) Unknown, not seeking employment	9.42	12
(i) Actively seeking employment	3.72	6
Total	100.	161

Even though any placement record can be improved, I think that our placement efforts compare favorably, and probably much better, with any liberal arts college in the country.

As I said earlier, I can only mention a few aspects of our "full-service" program. Through the items mentioned above, I hope that you will see that Gallaudet College is not a post-secondary institution with a program for the hearing-impaired student but, in fact, a "full-service" program designed for and totally committed to the needs of deaf students.

SEX EDUCATION AND DRUG ABUSE

Edward W. Scott, assistant superintendent, Illinois School for the Deaf, and David N. Adams, teacher, Illinois School for the Deaf, Jacksonville

Last September, Bob Dawson, our C.A.I.D. Program Chairman, contacted me in respect to summarizing what is being done in various schools in the areas of Sex Education and Drug Abuse.

In order to summarize, a survey questionnaire was developed, one for each area, which would give insight as to whether or not a given school had curricula and, if so, information about it, e.g., concepts covered, instructional format, etc.

The questionnaires were sent to 125 schools. Schools were chosen on the basis of having a student population of at least 50. The April, 1972, *Annals* was the reference; postsecondary programs were included.

Seventy questionnaires (56%) were returned. The following tabulations and generalizations are based on these 70 returns. Each questionnaire contained 12 items. However, every school did not respond to all 12 items. Therefore, raw numbers have been converted into percentages based on the number responding to a given item:

SEX EDUCATION QUESTIONNAIRE [TRANSPARENCY]

Re Item No. 1:

32% were day schools.
55% of the sampling were residential.
13% represented Postsecondary Programs.

Re Item No. 2:

The largest number of responses were from Region 2, next was Region 8.

While the total number of responses was disappointing, there was a good cross-sectional representation; the largest number of returns came from the largest population area. The smallest number of returns came from the smallest population area.

This response pattern was consistent for demographic areas:

38% from areas, population 2,500 to 50,000.
33% from inner city areas.
3 returns came from areas under 2,500.

Re Item No. 3:

47% of the schools had included Sex Education in their program less than five years.

23% more than five years.

30% did not currently provide Sex Education for a variety of reasons:

Four schools indicated student needs did not justify.
Nine schools were developing curriculum.
Two schools had provided but withdrew due to parent and public objections.
Two school boards would not permit.

One Department of Public Instruction would not permit.

Re Item No. 4:

Sex Education is offered most frequently at the secondary level, elementary followed closely, primary was a distant third.

Seldom was the course required.

Re Item No. 5:

Most often Sex Education was included in the Health Education curriculum. Science was a close second.

Re Item No. 6:

Where Sex Education was not included with another course of study, it was taught in a special block of time and usually scheduled "as needed." Only once was it offered on a daily basis as a separate entity course.

Re Item No. 7:

The instructional format usually combined three or more mediums. In one instance instruction was dependent on lecture only; twice audio-visual was indicated as the only approach.

Re Item No. 8:

50% of the time the classroom teacher was the only instructor.

24% of the time the physical education instructor was the only instructor.

14% of the time the school nurse was the only instructor.

The remaining 12% included three social workers, two cottage parents, a minister, a biologist. In six instances the instruction was divided among two or more staff members. At the postsecondary level, the college counselor was listed as responsible for instruction.

Re Item No. 9:

73% of the instructors had no special training for their subject.

27% with special training included three classroom teachers and two physical education instructors. The majority were school nurses.

Of those checked as having special training for teaching sex education, the vast majority were the school nurses. The question arises as to whether or not these nurses actually did have special course work or whether it was assumed. A follow-up check in the local school system and hospitals indicated that their nurses had no special course work to teach sex education. If this is a valid generalization of all nurses training programs, the above quoted percentages are incorrect . . . the percentage of staff teaching sex education without special training could run as high as 93%.

Re Item No. 10:

In response to item No. 10, a bibliography has been prepared as one of the two basic handouts. The bibliography represents resources in current use. New resources are appearing on the market daily.

Re Item No. 11–12:

16% of the returns indicated no incidents, heterosexual or homosexual.

Of the remaining 84%:

8% reported decreasing numbers in heterosexual activity.
10% reported an increase.
66% reported no change.

There were many comments on the increase of pornography. Information on homosexual activity is less readily available:

75% indicated no more, no less,
8% indicated decrease in incidents.
One school indicated increase in incidents.

This concludes the status report in respect to schools having curriculum in sex education.

As mentioned in Item No. 10 of the questionnaire, a handout has been prepared indicating book and nonbook references currently in use.

As listed in the bibliography, there are six curriculum guides which have been developed and provide detailed courses of study in sex education. One of these guides is the Social Hygiene Guide developed and produced at the Illinois School for the Deaf. Excerpts from this Guide, listing the major aims of the given sections at the various grade levels, have been sequentially assembled and are available as handouts.

The second part of this section meeting covers the area of Drug Abuse. Mr. Adams will follow the same format:

(*a*) Survey of present programming in the various schools.

(*b*) Recommendations for course content in a Drug Abuse Program.

(*c*) A bibliography of book and nonbook instructional materials.

RESPONSE TO DRUG EDUCATION QUESTIONNAIRE

125 questionnaires were mailed.

70 questionnaires were returned for 56+%.

This is not enough of a response to derive any valid conclusions, however, they do show some trends.

Many questions were unanswered for one reason or another. A few questionnaires came back blank, about 4% of the 70.

Of the 70 returned:

Residential, 55%.
Day Schools, 32%.
Postsecondary, 13%

From the secondary, elementary and primary group, 23 schools or 37.7% had no program.

This group showed that last year they had:

increases of, 13%.
unknown, 82%.

The past four years had:

increases of, 17%.
unknown, 78%.

Programs were established in 38 schools, 60.7%. Of these, the percent of programs less than five years was 89.5%.

Of these 38 schools;

required programs were 26%.
available programs were 74%.

Programs that used classroom teachers, 76%, but required no special training, 81%.

The most widely used methods were:

discussion, 87%,
A–V materials, 78%,
Lecture, 59%,
Reading, 49%.

These programs indicated that last year:
- increases were 24%,
- unknown, 65%.

In the past four years:
- increases were 32%,
- unknown, 57%.

The problem areas indicated were:
- marijuana, 43%,
- alcohol, 27%,
- stimulants, 16%,
- depressants, 5%,
- others, 9%.

Nine postsecondary schools replied. Eight had programs less than five years.

Their programs were mostly lecture and discussion done by counselors in a nonclassroom environment.

Two schools had data to show an increase in problems and six had no accurate data basically because their students were nonresidents.

I cannot determine if the lack of information is due to low interest, a lack of knowledge of the problems with our students, or if there is an administrative problem in answering some of the questions in the questionnaire.

Due to the lack of response it is impossible to draw any definite conclusions. Several trends emerge from the statistics, however. Because of the response and looking at national statistics, I would venture to say that we are educating a fortunate minority group because the percentages obtained are below the national average. Maybe we are behind the times, due to our lack of interest. As educators we should be aware of the problems and be prepared to cope with them.

Considering today's deaf student as gullible and easily misled, it is vital to provide direct information instead of his experimentation. Deaf students have many problems to overcome without falling into a "pit of despair." They need help in understanding the damage that can be done by drugs before they find out for themselves. I'm sure that almost every school has had "false alarms." These are a problem because the young people are looking for the thrill and prestige that go with the drugs. The boy who bought a "nickel bag of grass" only to find out that it was of the Kentucky Blue variety, or the boy who takes a handful of Vitamin E capsules trying to get "high" is looking for "kicks." These boys are lucky because the materials they obtained were not harmful, but the next time it might be dangerous.

Counseling and discussion seldom work because they occur too late to help the student change his values. It is, also, done primarily by unqualified, uninformed persons. Counseling will many times answer a person's questions about drugs, but alone will seldom change a teenage student's ideas, especially one who is already trying drugs. Peer group pressure is not lessened, especially when drug counseling or discussion is maintained as a "one-shot" program. One comment I received on a questionnaire stated it very well, "It has been quite well established that no amount of information, per se, is going to be very effective in curtailing drug abuse at the older teen level. A genuine respect for substances, an appreciation of the 'ecology' within the human system, and a healthy system of personal values must happen during the formative years . . ." With this idea and the problems that exist with drugs today, we should be creating curricula in the elementary as well as secondary levels.

There should be a person who is trained in the area of drug education. He should be a resource person and a student counselor. Misinformation and falsehoods can be as detrimental to our students as it is to hearing students.

We need to have information available at a language level that our students can understand. There seem to be no captioned films accessible for use for our students. However, many good films on the market are available for captioning. Good audio-visual materials for classroom use are almost nil.

There are several places that we can start. Units on drugs and materials found in the home should be presented in the elementary language curriculum so the students develop a respect for these substances. The units should be continuous through high school progressing to the appropriate levels. There are copies of a basic concept available for you here.

Films should be made available through Captioned Films that can be used in the classroom and as student informational films. There are many forms of audio-visual materials on the market. Some are not done well in an acceptable form, some are too difficult for our language-deprived students, and some are good. The process of sorting out the one for your use will have to be done mainly by the teacher. There is a list of materials available to you that includes commonly used materials by other schools and some that I have found to be exceptionally well done.

People who develop the curricula, who choose the materials to be presented, and who counsel the students should be knowledgeable in the area. They should know the material so that misinformation can be stopped. If a question needs answering, they should know where to find it or guide the student to the answer.

Finally the programs, materials and sessions should be continuous. As the student grows so does his interest and the amount of knowledge needed. Presenting this continuously through the formative years and into the adolescent years is important. The "one-shot" lecture/film concept gives little understanding and personal guidance.

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Sex Education

BOOKS

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Andry, Andrew *How Babies Are Made,* Time-Life, 1968.
Barclay, et al *Teen Guide To Homemaking,* Webster Div., McGraw Hill.
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Engelman and Sundberg *A Child Is Born,* Delacorte Press
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Ten Heavy Facts About Sex } John Day Co.
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A Doctor Talks To: Nine To Twelve Year Olds } Budlong Press
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Mari, I. *The Chicken And The Egg,* Pantheon
May, J. *Family Life Education Program: How We Are Born*
Family Life Education Program: Living Things And Their Young
Family Life Education Program: Man And Woman } Follett
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Showers, P. *A Baby Starts To Grow*
Before You Were A Baby } Crowell
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VanDyke, V. *That Girl In Your Mirror,* Ginn Publishing Co.
Vlick, V. *How And Why Not To Have A Baby,* Paul Erikson, Inc.
Webster, B. *What You Need To Know About VD,* Scholastic Book Services
Whelan and Quadland *Human Reproduction and Family Planning,* Syntax Laboratories
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Sex Education, The How To For Teachers } Hiltz Publishing Co.
Wilkerson, D. *The Untapped Generation,* Pyramid Publications
Zeichner, I. *How Life Goes On,* Prentice Hall
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Curriculum Series for the Deaf, Muncie, Indiana: Ball State Univ.
High School Curriculum, Desiderata, Indiana School for the Deaf, 1200 E. 42nd St., Indianapolis, IN 46205
New York State Five Strand Approach, New York State Education Dept., 800 No. Pearl St., Albany, NY 12204
The Road To Health, (California State Series) Univ. of Southern California, Instructional Materials Center for Special Education, 1031 S. Broadway, Los Angeles, CA 90007
Series Of Eight Programs, Southwest Regional Media Center, New Mexico State Univ., Las Cruces, NM 88001
Social Hygiene Guide, Illinois School for the Deaf, 125 Webster, Jacksonville, IL 62650

NON-BOOK

I. Films

A. *Captioned Films:*[1]
- Adolescence: Love and Maturity
- A Quarter Million Teenagers
- Beginning of Life
- Beginning to Date
- Biography of the Unborn
- Boy to Man
- Eggs to Chickens
- Fertilization and Birth
- From Generation to Generation
- Girl to Woman
- Heredity
- High School Prom
- Human Growth
- Junior High—A Time of Change
- Kittens: Birth and Growth
- Our Wonderful Body: How It Grows
- Personal Hygiene for Boys
- Society and You
- The Day Life Begins
- The Human Body: Reproduction System
- To Plan Your Family
- Why Exercise

B. *Noncaptioned:*
- *A Half Million Teenagers*, Churchill Films
- *Boy to Man*, Churchill Films
- *Girl to Woman*, Churchill Films
- *Sex Education*, Concordia Films

II. Filmstrips

- *Growing, Growing, Grown* [1]
- *Life Cycle Center*, Sterling Films
- *Pattern of Life* [1]
- *Reproduction 100*, Guidance Associates
- *The New Baby* [1]
- *Venereal Disease And Your Health*, SVE

III. Transparancies

- *Body Changes At Puberty*, 3M Co.
- *Growth and Behavior Differences In Girls and Boys*, 3M Co.
- *How Life Begins*, 3M Co.
- *Human Reproduction Systems*, 3M Co.
- *Junior High: A Time of Change* [1]
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- *The Day Life Begins* [1]
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IV. Study Prints

- *Beginning The Human Story: A New Baby In The Family* [1]
- *Love And The Facts Of Life* (*Anatomy Charts*), Evelyn Mills Duvall, Association Press, New York

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[1] Available through Captioned Films for the Deaf. Inquiries should be directed to: Educational Media Distribution Center, 5034 Wisconsin Avenue, N.W., Washington, D.C. 20016

SEX EDUCATION QUESTIONNAIRE

1. School Classification:
Day School: ___Public ___Private ___Parochial
Residential: ___Public ___Private ___Parochial

2. School Location:
___Region 1: (CT, ME, MA, NH, RI, VT)
___Region 2: (DE, MD, NY, PA, VA, WDC, WV)
___Region 3: (AL, FL, GA, MS, NC, SC, TN)
___Region 4: (IL, IN, KY, MI, OH, WI)
___Region 5: (IA, KS, MN, MO, NB, ND, SD)
___Region 6: (AR, CO, LA, NM, OK, TX)
___Region 7: (AZ, ID, MT, NV, UT, WY)
___Region 8: (AK, CA, HI, OR, WA)

Demographic Area:
___inner city areas ___rural areas (under 2,500)
___other urban areas (over 50,000) ___other demographic areas (from 2,500 to 50,000)

3(A) Sex Education has been included in the school program for
___less than five years ___more than five years

(B) Sex Education is not currently included in the school program...
___student needs do not justify
___the information is provided outside of the school program
___curriculum is being developed
___other (specify)________________________

If you responded to item 3(A), please continue with item 4.
If you responded to item 3(B), please skip to items 11 and 12.

4. School Levels:

		Sex Education			
	Enrollment	Provided		Required	
Primary (C.A. 4-9)	___	___Yes	___No	___Yes	___No
Elementary (C.A. 10-14)	___	___Yes	___No	___Yes	___No
Secondary	___	___Yes	___No	___Yes	___No
Postsecondary	___	___Yes	___No	___Yes	___No

5. Sex Education is taught in combination with other coursework:
(Indicate school levels, if appropriate--Pri., Elem, Sec., Postsec.)
___Yes, with ___Language ___Health ___Science ___Other___________
___No

6. Sex Education is provided as a separate entity. The instructional period is conducted:
Primary ___Daily ___Special blk/time ___Scheduled as needed
Elementary ___Daily ___Special blk/time ___Scheduled as needed
Secondary ___Daily ___Special blk/time ___Scheduled as needed
Postsecondary ___Daily ___Special blk/time ___Scheduled as needed

7. The instructional format is based primarily on:
___lecture ___reading ___other (specify)___________
___discussion ___viewing audio-visual materials

8. The instructor is a
___classroom teacher ___social worker
___physical education instr. ___school nurse
___counselor ___other (specify)________________

If a team teaching approach is used, please indicate the combination.

9. Is special training in Sex Education required for the instructor?
___Yes ___No

10. Please list the major book and audio-visual references used by your instructor. Please list only those in current use.

A. Title________________________ Author/Producer__________________

Publisher______________________________ Grade Level___________

B. Title________________________ Author/Producer__________________

Publisher______________________________ Grade Level___________

C. Title________________________ Author/Producer__________________

Publisher______________________________ Grade Level___________

D. Title________________________ Author/Producer__________________

Publisher______________________________ Grade Level___________

E. Other:____

____

11. Number of incidents of heterosexual intercourse in school population during the past year is
___decreasing ___the same ___increasing
during the past four years is
___decreasing ___the same ___increasing

12. Number of incidents of homosexual activity in the school population during the past year is
___decreasing ___the same ___increasing
during the past four years is
___decreasing ___the same ___increasing

Any course outlines or listings of basic concepts covered that can be sent would be appreciated. Please add any comments or explanations on the reverse side.

PLEASE RETURN THIS QUESTIONNAIRE TO

EDWARD W. SCOTT, ASSISTANT SUPERINTENDENT
ILLINOIS SCHOOL FOR THE DEAF
125 WEBSTER
JACKSONVILLE, IL 62650

Drug Abuse

For Teachers

Bloomquist, E. R. *Marijuana,* Beverly Hills:Glencoe Press, 1970.
Byrd, Oliver E. *Medical Readings on Drug Abuse,* Reading:Addison-Wesley Publishing Co. 1970.
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Drug Abuse: Escape To Nowhere, A Guide for Educators, Philadelphia: Smith Kline and French Laboratories, 1969.
Drug Abuse: A Course for Educators, Butler Univ., College of Pharmacy, 1968.
Teaching About Beverage Alcohol, Office Superintendent of Public Instruction, Springfield, IL, 1970.
Teaching About Drugs: A Curriculum Guide, K–12, Kent: Amer. School Health Assoc., 1970.
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For Students

A Federal Source Book: Answers To The Most Frequently Asked Questions About Drug Abuse, Chevy Chase: National Clearinghouse for Drug Abuse Information, 1970.
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Drug Abuse, Book 1 and 2, Personal Development Series, Albany: Delmar Publishers, 1970.
Drug Abuse: The Chemical Cop-Out, Chicago: National Assoc. of Blue Shield Plans, 1969.
Katy's Coloring Book, Washington: U.S. Dept. of Justice, Bureau of Narcotics and Dangerous Drugs.

16mm Films

Drug and the Nervous System, Churchill Films, 662 N. Robertson Blvd., Los Angeles, CA 90069, 1967.
(Good to excellent in information—must be captioned, partially animated.)
Hide and Seek, Columbia Univ. Press, 1125 Amsterdam Ave., New York, NY 1966.

(Good to excellent, very good picture of a teenage drug addict, supposedly actual experiences. Must be captioned. It is narrated.)

US, Churchill Films, 662 No. Robertson Blvd., Los Angeles, CA 90069.

(An excellent film on pollution of all sorts, but focusing basically on alcohol and drugs. Best at High School level. Should be captioned, but could be used with concept interpretation.)

LSD–25, Professional Arts, Inc., Universal City, CA 91608, 1967.

DRUG EDUCATION QUESTIONNAIRE

1. School Classification:
   Day School: ___Public ___Private ___Parochial
   Residential: ___Public ___Private ___Parochial

2. School Location:
   ___Region 1: (CT, ME, MA, NH, RI, VT)
   ___Region 2: (DE, MD, NY, PA, VA, WDC, WV)
   ___Region 3: (AL, FL, GA, MS, NC, SC, TN)
   ___Region 4: (IL, IN, KY, MI, OH, WI)
   ___Region 5: (IA, KS, MN, MO, NB, ND, SD)
   ___Region 6: (AR, CO, LA, NM, OK, TX)
   ___Region 7: (AZ, ID, MT, NV, UT, WY)
   ___Region 8: (AK, CA, HI, OR, WA)

   Demographic Area:
   ___inner city areas
   ___other urban areas (over 50,000)
   ___rural areas (under 2,500)
   ___other demographic areas (from 2,500 to 50,000)

3(A) Drug Education has been included in the school program for
   ___less than five years ___more than five years

(B) Drug Education is not currently included in the school program...
   ___student needs do not justify
   ___the information is provided outside of the school program
   ___curriculum is being developed
   ___other (specify) ______________________________

   If you responded to item 3(A), please continue with item 4.
   If you responded to item 3(B), please skip to items 11 and 12.

4. School Levels:

		Drug Education			
	Enrollment	Provided		Required	
Primary (C.A. 4-9)	_____	___Yes	___No	___Yes	___No
Elementary (C.A. 10-14)	_____	___Yes	___No	___Yes	___No
Secondary	_____	___Yes	___No	___Yes	___No
Postsecondary	_____	___Yes	___No	___Yes	___No

5. Drug Education is taught in combination with other coursework:
   (Indicate school levels, if appropriate--Pri, Elem, Sec, Postsec.)
   ___Yes, with ___Language ___Health ___Science ___Other__________
   ___No

6. Drug Education is provided as a separate entity. The instructional period is conducted:
   Pri. ___Daily ___Special block/time ___Scheduled as needed
   Elem. ___Daily ___Special block/time ___Scheduled as needed
   Sec. ___Daily ___Special block/time ___Scheduled as needed
   Postsec. ___Daily ___Special block/time ___Scheduled as needed

7. The instructional format is based primarily on:
   ___lecture ___reading ___other (specify)______________
   ___discussion ___viewing audio-visual materials

8. The instructor is a
   ___classroom teacher
   ___physical education instr.
   ___counselor
   ___social worker
   ___school nurse
   ___other (specify)________________

   If a team teaching approach is used, please indicate the combination.

9. Is special training in Drug Education required for the instructor?
   ___Yes ___No

10. Please list the major book and audio-visual references used by your instructor. Please list only those in current use.

A. Title__________________________ Author/Producer__________________

Publisher__________________________________ Grade Level__________

B. Title__________________________ Author/Producer__________________

Publisher__________________________________ Grade Level__________

C. Title__________________________ Author/Producer__________________

Publisher__________________________________ Grade Level__________

D. Title__________________________ Author/Producer__________________

Publisher__________________________________ Grade Level__________

E. Other:____

____

11. Number of incidents of drug abuse in the school population
    during the last year is
    ___decreasing ___the same ___increasing
    during the past four years is
    ___decreasing ___the same ___increasing

12. Incidents of use/misuse have been with:
    ___marijuana
    ___alcohol
    ___stimulants
    ___depressants
    ___hallucinogens
    ___narcotics

Any course outlines or listings of basic concepts covered that can be sent would be appreciated. Please add any comments or explanations on the reverse side.

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JACKSONVILLE, IL 62650

ENGLISH AS A FUNCTION ON THE POSTSECONDARY LEVEL

Edward L. Scouten, coordinator, English Department, National Technical Institute for the Deaf, Rochester, New York

English on the Postsecondary Level

In our dollar oriented society the ultimate mission of postsecondary education for the deaf, our cultural objectives notwithstanding, is to prepare young adults to earn their living in the areas of their individual aptitudes, interests, and choices. These areas are broadly classified as business, science, technology, education, and social service.

The contents of each and all of these areas of endeavor are locked within countless textbooks, library books, process papers, laboratory manuals, and monographs. The sole and singular key which will enable the hearing impaired student to unlock these vital sources is his ability to read, comprehend, and assimilate printed English.

Assuming that the student does successfully assimilate the information gleaned through his reading efforts, he will then be called upon in class, in the laboratory or in conference to respond, hopefully, in either oral or written English. He will, of course, definitely be expected to prepare reports, reviews, term papers, and similar documents all to be set down for better or for worse in his own written English.

These are but some of the receptive and expressive English demands placed upon a hearing impaired student at the postsecondary level in his preparation for the world of work.

Some Nomenclature Clarified

In order to consider English as the educational problem we recognize it to be, we should perhaps first establish the terminology we are to use relative to the students we teach.

First, the word *deaf* is much too generic for accuracy. Properly we should consider some precise terms which will more clearly delineate the various types of hearing impairment and their educational implications. The first of these is the term *postlingually deaf*. A student so designated retains aural recollections of speech and other past auditory experiences. To be sure such a person is organically deaf, but linguistically and psychologically, he has remained a hearing person. This is the case because the onset of his deafness occurred at some point *after* his linguistic years, i.e., that period from birth to the age of five during which speech and language are developed. A student may also be classified as *postlingually hard of hearing*. Such a person is likewise linguistically and psychologically hearing.

Postlingually hearing impaired people present few educational problems. Their difficulties are most frequently psychological. They must overcome the trauma caused by the onset of deafness, the concerns regarding possible speech deterioration, and possibly the problem of tinnitus. Aside from a few special considerations in the classroom, postlingually hearing impaired students may be equated in everyway with their hearing peers, for both have experienced the same early auditory and linguistic period of development.

The next category of hearing loss is designated by the term *prelingually deaf*. This indicates that a student has no aural recollections of speech nor other meaningful auditory experiences. He was deprived of his linguistic years by an early on-set of deafness at some point between his birth and the age of five.

Such a student has no naturally acquired speech, but only that developed through the instructional techniques employed through the procedures of oral education. Speech thus attained ranges from the clearly intelligible to the wholly unintelligible.

English and the Prelingually Hearing Impaired Student

In addition to the average prelingually deaf student's speech intelligibility problems, are his more basic and subtle problems relative to English syntax and vocabulary. While his language difficulties obviously stem from his inability to hear during his linguistic years, his problems have likewise been reinforced by his infrequent opportunities to *see* orthographic English vocabulary and syntax during his formative preschool, preparatory and primary school years.

A student may also be classified as *prelingually hard of hearing.* Such a person will have speech to the extent that he can hear. The imperfections of his speech will echo to a large degree the imperfections of his aural reception. In addition to his speech difficulties the prelingually hard of hearing student will also manifest the same anomalies in syntax and vocabulary as the prelingually deaf student.

Not only does the prelingually hard of hearing youngster hear fragmented English, but he *sees* fragmented syntax in the lip movements of speechreading as well. With such reinforcement of error, there is little wonder that he should have grave problems with English in that both his auditory and *visual* avenues present him with imperfect patterns to be imitated and learned.

SOME BASIC OBSTACLES OF ATTITUDE

In addition to the perceptual limitations imposed on the prelingually hearing impaired student in his efforts to acquire English, there are also some almost immoveable psychological obstacles which have been inadvertently created through his school years.

First, a deep-rooted antipathy toward language exists within the average prelingually hearing impaired student, because he finds writing English a constant and growing source of personal embarrassment. Almost every time he sets pencil to paper, he reveals his ignorance and his effort evokes criticism. Consequently, over the years he develops a calloused protective reaction of indifference. This presents no small barrier in the business of teaching him.

In reading the prelingually deaf student perceives a chain of symbols, some with meanings and some without. When asked a question about what he has read, the student frequently blushes, shrugs and in his surrogate mode indicates, "Me—curly-stomach-reading." This roughly translated means, "Reading makes me sick."

Such negative reactions to the reading and writing of English are almost universal within the prelingually hearing impaired school population. Frequently these student reactions come to influence the teachers whose high hopes and expectations are brought low by the consistently poor results coming from their instructional efforts. Thus, an insidious cycle of failure evolves from which the students seldom, if ever, free themselves.

THE TRADITIONAL PERSPECTIVE REGARDING ENGLISH

Traditionally in the curriculum content, intermediate through high school, we educators have compartmentalized all of our disciplines into specific study areas: science, mathematics, social studies, industrial arts, physical education, and English. Each discipline stands independently, apart and alone in its own tight little box of facts and activities.

Because our deaf students have been educated largely according to this "box system," they can see little or no relation between one subject and another. English, for them the most despised subject of all for reasons given, represents the largest and most incomprehensible box of all, because regardless of how hard they bang on it in the classroom, it never opens up to them fully. The classrooms effort alone is not enough.

This predicament has dominated the education of prelingually deaf students for generations. The only possibility for breaking this cycle of disaster appears to lie in everyone's attaining a wholly new perspective of English in terms of the goals for which we are hopefully preparing our students.

English in Transition

English in a new perspective developed as a result of many classroom contacts and experiences with prelingually deaf students. One such constructive experience involved a very typical prelingually deaf student who one day yawned and listlessly pursued his writing of an expository paper, the purpose of which exercise was to "improve his English." Suddenly with a burst of impatience with himself and with English, the young man began to describe quite graphically to his instructor his thoughts on the matter of writing compositions and the whole imposition placed upon him by such dumb assignments. His thoughts were finally summarized in a single "chin-wiping" gesture which is commonly translated as meaning *dry*, but which may be variously interpreted as *dull, boring, uninteresting* or even *irrelevant.*

The instructor in search of something relevant asked the student what he was doing in his machine tool laboratory. Instantly the young man's listlessness vanished. From his slumped position, he sat upright and fingerspelled with minimal confusion "parallel clamps." To the liberal arts oriented English instructor the term "parallel clamps" was wholly without a referent. The student quickly perceived with delight that the instructor was beyond his technical depth and so began to describe in clearly defined gestures: "Ironbars, two parallel, bolted workbench. Twist open bars. Twist close, bars together. Hard, strong. Hold strong anything." The instructor immediately "got the picture" of a vise. Parallel clamps was a vise. The young student nodded enthusiastically because he had brought light to his technically benighted English instructor.

The student's zeal and interest were so obvious, the instructor was prompted to make the most of it. He questioned the young man as to the tools and equipment utilized along with the materials used in making the clamps. Instantly the student responded with descriptive gestures. With this the instructor pushed a tablet and pencil toward him and said, "Don't tell me. Tell the paper." Whereupon the student began with an intense enthusiasm to "tell the paper." Obviously the kid was "hooked" and the instructor made an assignment.

1. Explain the function (use and purpose) of parallel clamps.
2. List all of the tools and equipment required for making parallel clamps.
3. List all of the materials required for making parallel clamps.
4. List in sequence (order) each step required in making parallel clamps. Each step should be so clearly written that any tool maker can read the directions and produce (make) a parallel clamps device.
5. The assignment due date will be in two weeks.

No student ever took an expository writing assignment with greater motivation and zeal.

The English instructor's objective was obviously for the student to achieve acceptable English. The other advantages in terms of the student's technical education were that the assignment required him to recollect sequentially the steps relative to the process and procedure for making parallel clamps. It required him to know the names of all tools, pieces of equipment and materials. In short it was an invaluable review and reinforcement of a technical procedure expressed in English.

During the writing process the student rechecked for content-particulars with his technical instructor. He similarly checked with his English instructor on questions and problems regarding his writing.

Also brought into focus was the fact that an English program on the postsecondary level need not be a drag in its traditional sense, but may become a genuine service which seeks to help the student attain his goals within his career major.

It was because of such observations of reality that a wholly new turn-about perspective of the English problem was considered and eventually adopted by the Technical English Department at NTID.

English in a New Perspective

A momentary reflection on the demands of the world at large clearly shows us that the English language serves as a kind of social lubricant which enables a person to move more smoothly and effectively through his familial, community and occupational obligations.

Without adequate English a prelingually hearing impaired person's chances for securing a position commensurate with his intelligence are almost *nil*. Similarly the opportunities for upward mobility within such a person's chosen field of endeavor are obviously limited, if he cannot read and write adequately.

In consequence the English Department became the Technical English Department and underwent a complete reorganization for the purpose of changing the image of English from a remote and irrelevant subject to the viable and practical vernacular it truly is. As a first move, all of the English instructors were redesignated *English consultants,* persons who advise, assist and tutor students for a better understanding and usage of their language.

English consultants were then assigned to each of the four technologies, which are Engineering, Business, Visual Communications, (i.e., art, printing and photography) and Technical Science. The idea in this being that each consultant would move freely into any classroom, laboratory, studio or shop activity within his technology, for the purpose of acquanting himself with the English requirements of the various technical career disciplines. The consultant would also ascertain the individual language needs of the students, and confer with the technical instructors concerning student English problems as *they* might see them.

Students were then scheduled for classes homogeneously according to their career majors. There was begun also a greater emphasis on individual conferences or very small instructional groups of two or three students.

The initial reaction of our English consultants to the change was their wondering how they as traditional liberal arts English teachers could ever hope to become sufficiently oriented in the technologies to be able to work with laboratory reports, process papers and other technical materials. A reasonable thought that was considered in this direction was that, if 18 and 19-year old prelingually deaf youngsters were expected to understand and express themselves on technical matters, certainly mature people with solid foundations in the English language and with considerably more living and learning experience should be able to acquire at least a nodding acquaintance with technical material after a few quarters of exposure to it; and thus it has been.

Student reaction to the change in the English procedure was and still is varied, from high enthusiasm to an uncomprehending questioning of how a subject like machine tool operation could possibly be related to English. Through careful orientation and counseling, however, the new NTID student will realize that process papers, job tickets, equipment and procedural vocabulary along with conversational note reading and writing all come under the heading of English. He will also come to know that his Engilsh consultant can do much to assist him to a better understanding of his textbooks and can also assist him in producing more intelligible and correctly written technical assignments.

While technical instructors have no responsibilities in the area of correcting English grammar and syntax, they can greatly assist in language error identification as they read their student assignments. The suggested procedure for doing this is simple and requires no expenditure of time.

In reading a student paper, a technical instructor merely places a colored dot under each of the errors or omissions which he may quickly identify as "not sounding right." The paper with its error-dots may then be referred to the student's English consultant who will assume the responsibility for providing corrections, explanations and reinforcement opportunities.

Enlisting the assistance of the technical instructors in the business of error identification places a new and vital importance upon English in the minds of the students. Such a concern for English coming from a highly regarded technical instructor, say in electromechanical engineering, adds a new and powerful significance to English as an important means to a worthwhile end, i.e., becoming an electromechanical engineer.

To achieve this perspective, however, students and teachers alike must come to recognize the fact that English is not a self-sustaining discipline, but is wholly dependent upon life. Only with this realization will English become a genuine and useful tool of communication for prelingually deaf students. As long as the fallacy is perpetuated that English must be treated as a second language for prelingually deaf students and that a simple and loosely knit surrogate is their natural language, they will never acquire acceptable English.

Once again for the record we interject that, *a natural language may be any language which is initially introduced to a preschool child and is consistently and persistently used as his sole medium of communication through his formative linguistic years.* It is only during this period that acceptable receptive and expressive English for prelingually deaf youngsters may be established. This talk of English for preschool children may well appear irrelevant in a discussion of English on the postsecondary level, yet we should remember that it will be the preparation of these children which will determine the degree and the quality of the postsecondary education we shall one day give them. Here and now, however, we are concerned with some very real Babbidge problems which we hope to ease, if not fully resolve.

A Forward Look

At NTID in the near future the idea of courses in English with the exception of that in literature will be almost wholly eliminated and along with them the eternal threat of failure. As indicated, English will not stand apart as a separate subject, but will serve as an essential function, a working tool of communication, an integral part of each technology or career major. The content for English reading and writing will be almost wholly generated not by the English consultants, but by the technical instructors in the various technologies through their required process papers, journal resumés and laboratory reports.

Students manifesting the typical problems in syntax and vocabulary will not be penalized for their language difficulties, but will be referred to an English Assistance and Resource Center for tutoring and reinforcement opportunities.

In that the prognosis for so-called "good" English in our prelingually hearing impaired students is not very strong, we shall strive to assist them in the elimination of their "common errors" and build within them, at this very late date in their educational lives, a self-monitoring sense and a constructive recognition of their own linguistic limitations. In this they will learn to seek, without embarrassment, assistance from such persons who may be capable, understanding and willing to help them.

Our goal for this present generation of prelingually hearing impaired students is for them to achieve *intelligible* expressive English. While it is not the ideal, it is a practical goal. We shall, therefore, continue with it until such time in the future when we may be able to raise our sights as a result of the improved opportunities for English perception, acquisition and usage afforded by our schools for the deaf.

As for some specific approaches at NTID, those students who are not orally inclined or aurally endowed, the English communication emphasis in classes and laboratories will increasingly be upon simple pad and pencil, overhead projector and chalkboard reading and writing.

For those students, however, who obviously have intelligible speech, effective speechreading skills, and/or residual hearing the English communication emphasis will increasingly be upon the oral-aural modes, in addition to the reading and writing requirements of the class or laboratory.

The rationale for the approaches described is simply that these are the English communication modes the students will be using on their jobs *after* graduation. At NTID not only must the technical aspects of industry be accurately simulated, but the various means of genuine English communication must be accurately simulated as well.

The marching orders for this direction and thrust come not from any educational school of thought or philosophy. It is derived solely from the very pragmatic work-a-day world of business and industry. The survival of our prelingually hearing impaired students as first class citizens in the 21*st* Century, will depend unequivocally upon their ability to think and communicate effectively in English, all surrogates notwithstanding.

Discussion

The paper was well received with the idea it may be implemented at the high school level.

AN EARLY START WITH VISIBLE ENGLISH

Eleanor P. Scouten, supervising teacher, Rochester School for the Deaf, New York

The basic idea behind the Rochester Method long has been to supplement speechreading with fingerspelling, thereby giving the hearing-impaired child complete patterns of English.

For some time, there have been misgivings about the deaf child's ability to master English because of his difficulty in understanding ideas and manipulating syntax. Consequently, Visible English is taking on an additional role: helping the deaf child resolve these potential language problems long before they have a real opportunity to develop. Fortified with positive thinking and a modicum of structure, the deaf preschooler can acquire English and have fun doing it.

Through the use of Visible English, the Rochester Method attacks four major language problems which may eventually hamper English mastery.

1. Development of concepts continues to be accomplished through a wealth of experiences with the deaf child learning by doing. Concepts, presented in speech and spelling, are given an orthographic permanence through the use of simple drawings. The least mature of our children can understand these concepts when accompanied by drawings. Simple stick figures not only clarify concepts but provide the deaf preschooler with an orthographic means of expressing his own ideas.

2. Vocabulary is developed and expanded through natural situations and play activities and is highly personalized. On some days the verb, *Hop*, may involve hopscotch or rope-jumping activities whereas another day the word takes on new meaning in the form of a black and white rabbit. Close correlation between the spelled and printed forms of the word occurs as the deaf child associates the twist of the wrist in the spelled *Hop* to its printed equivalent. Soon he is picking up whole-word configurations, both spelled and printed.

Environmental learning is given added emphasis through the use of labels. Reading becomes functional when printed cards appear in the playroom, or the bathroom.

Early use of words in connected language is necessary to prevent the frozen mindedness which comes with too long an exposure to the isloated form of words. Even though the preschooler may be able to read only the word, *blue*, he can learn to think in phrases: (illustrations appeared here, showing the word Blue and a sailboat, also, the word Blue and a pair of trousers).

3. Early introduction of Fitzgerald Key concepts facilitate in the comprehension of question forms and at the same time provides the deaf child with a language-correction tool at an early stage. Labeling a child's possessions: (illustrations appeared here, showing: "Mary's chair" and "Jerry's dog") makes the eventual comprehension of *Whose:* an easy task. So that the deaf child will think VERB as well as FELL when he sees (stick figure illustration of a child, prone), numerous reinforcement activities in classification are devised: Musical Chairs, Drop the Handkerchief and Lotto are all great fun but provide additional learning experiences when used for Key classification.

4. Early development of syntax will help the deaf child distinguish between various sentence constructions. Any work in syntax must be preceded by the association of certain verbs with certain situations. The deaf preschooler can learn that *hurt* may be used for:

cut, bruised, scraped, bumped

or *made* may carry the connotation of:

built, baked, drew, cut, pasted, colored, sewed

but regardless of the meaning, one verb may be used initially thereby determining one type of sentence construction.

Coupling Visible English with sentence patterns, Rochester teachers are helping their preschoolers master syntax through these Key-related patterns:

Pattern	*Verbs used*
1. Who: Verb: (Jane fell.)	Action verbs: ran, jumped, fell, etc.
2. Who: Verb: (Tommy is funny.)	Linking verbs: is, are, was, were, etc.
3. Who: Verb: How many: What: (John made a big kite.) (The concept of *How many:* may be expanded to include other determiners.)	made, saw, got, found, bought, etc.
4. Who: Verb: Where: (Steve went to the hospital.)	went, came, will go, will come, ran, etc.
5. Who: Verb: Whose: What: (Sally hurt her knee.)	hurt, broke, tore, washed, brushed, etc.
6. Who: Verb: Whom: How many: What: (Ann gave us some cookies.)	gave, brought

With practice, our deaf child learns to manipulate these patterns into descriptions, sequence stories, and short paragraphs.

Fulfilling the specifications of a multi-media approach, the Rochester method, along with this language development, employs early and consistent amplification and speech development. Added activities in the visual analysis, conceptualization, sensory-motor co-ordination and memory-recall are provided for those children who may be developing potential learning disabilities. All these have as their ultimate goal: giving the deaf child the thrill of using English to express his own ideas.

PRINCIPLES OF AUDITORY TRAINING

Charles H. Sessler, director, Audiology Clinic, Indiana School for the Deaf, Indianapolis

There seems to be a trend toward placing hard-of-hearing and deaf children into a single category called "hearing impaired" and teaching them together. We have both local day schools and day class programs for the deaf and hard of hearing, and residential schools for the deaf with hard-of-hearing children enrolled in them. The significance of varying degrees of deafness for development and progress in verbal communication is apt to be overlooked under these circumstances. It is the purpose of this paper to suggest an approach to auditory training based upon the grouping of children according to hearing level rather than solely by age, academic level, intelligence or other criteria that may be applied.

Hearing is a fundamental right. It is pleasurable and satisfying—as anyone can attest who has observed a deaf child enabled to hear for the first time with a hearing aid. We stimulate hearing because it is there: (1) to enhance experience, for sound is characteristic of movement and a part of a thing that we wish a child to experience in its totality—if possible; (2) to provide a sensory input to the brain, which then integrates it with other information to form concepts, or ideas; (3) to develop the child's personal identity through the self-monitoring of his speech by means of auditory feedback (Costello, 1966); (4) to facilitate or expand the language process as an aid to verbal reasoning and to memory, because a verbal system provides a language code for association, storage and recall of information (Frisina, 1964, Ross, 1972).

DEFINITIONS

Auditory training is many things to many people. In the words of a deaf man, "Basically, auditory training consists of training the residual hearing by exercising it as much as possible" (Wright, 1969: 189). In the words of an audiologist it is, "The process of teaching the child or adult who is hard of hearing to take full advantage of the sound cues still available to him" (Carhart, 1960:373); or, ". . . a methodological utilization of residual hearing" (Wedenberg, 1970: 224). All of these definitions suggest a therapy model for the delivery of services, that is, lessons or exercises. Others have stressed the broader educational aspects as, "the application of conditions which reproduce for the deaf child, as nearly as possible, the conditions by which the normally hearing child learns to hear and to talk" (Whetnall and Fry, 1964:217); or the "use of residual hearing is part of a multisensory approach to development in education" (Watson, 1962:30). The author of the last quotation, Watson, declines to use the term "auditory training" because he feels that most deaf children do not improve in auditory discrimination skills sufficiently to justify it. Others reject the term "deaf" because they feel that this term defeats the purpose of auditory training, "since it is obvious that 'hearing' is irrelevant to a 'deaf' individual (Ross, 1972:4). Still, most of us would accept the statement by Ross that "any child whose training must be approached through a primarily visual mode is educationally deaf" (p. 5). This is the sense in which we use the term, and auditory training for us is simply "the systematic use of residual hearing in teaching the deaf child" (Sessler, 1963:1).

Thus, there are two models represented by these definitions of auditory training, one emphasizing improvement in auditory skills, the other expecting no improvement in hearing or listening necessarily and emphasizing lipreading, with hearing serving a supplementary function. Sanders (1972) points out that both models are valid but for different degrees of hearing impairment. The second, educational model is acceptable if one agrees that the purpose of auditory training is improvement in communication rather than improvement in listening skills alone.

The definitions imply that auditory training is a systematic procedure, that it is an environment or atmosphere surrounding the child, and that it is a part of the educational program of the school. This paper is concerned with factors worthy of consideration in providing auditory experiences for the child in a residential school for the deaf. The factors are: (1) classification of children according to hearing level, (2) goals and objectives in auditory training, (3) grouping the children according to hearing characteristics, and (4) evaluation of the children and their progress.

CLASSIFICATION

Audiologists and educators of the deaf do not communicate very well. Teachers complain that audiological reports are of little help to them and audiologists that there is too little feedback of information from the classroom. One of the problems of the two groups seems to be the lack of a common terminology or a scale with which to describe the hearing characteristics of children. Several such scales are in use, however, and these are based upon the better ear average in decibels of the three frequencies 500, 1000, and 2000 Hz of the pure tone audiogram (ISO).

Since speech constitues the important stimulus for auditory training, decibels need to be translated into hearing for speech. Speech reception thresholds provide direct information about hearing levels when these are available. The principle of understanding for speech has been used for gathering information in health surveys. The upper end of one speech scale is divided into three segments corresponding to moderate, severe, and profound impairment as follows:

56–70 dB: Frequent difficulty with loud speech
71–90 dB: Understands only shouted or amplified speech
91+ dB: Usually cannot understand even amplified speech
(Human Communication, 1969, p. 14)

Goetzinger (1972) added the following information about hearing aid use; 55–70—the area of greatest satisfaction from a hearing aid; 70–90—good results from a hearing aid, but dependent upon many factors, example, discrimination; 90+—help from aid depends upon one's objectives, lipreading and voice quality usually helped. There is also a need to determine the limits of hearing and of vibrational sensitivity in the profoundly deaf. Nober (1967) has called attention to an overlap in low frequency hearing and tactile sensation generated by the bone conduction vibrator and the headphone of a pure-tone audiometer at high intensity levels. This matter is of increasing importance for auditory training since the development of hearing aids with low frequency characteristics and transposer aids which shift high frequency sound to lower frequencies. It is possible with these instruments to obtain responses for frequencies at which a child gives no response from the audiometer.

TRANSPARENCIES

Nober, E. H., *Laryngoscope* 1967, 77:12:

No. 1 p. 2130—

Range of vibrotactile air conduction thresholds from the palm of the hand. Subjects, ninety-four children from a school for the deaf, ages, 5–15. One-third to one-half responded at 1000 Hz, none above.

No. 2 p. 2135—

Threshold responses obtained from the hand and at the ear. (Median values of two studies) Note: Responses below 500 Hz are better from the palm. Responses above 500 Hz better from ear.

GOALS AND OBJECTIVES

In the beginning there needs to be an understanding of the child's problem, the degree of hearing impairment, time of onset, etiology, nature of any secondary handicaps present, experience with amplification, etc. Then a plan for auditory training can be developed. It may be necessary to introduce a young deaf child to sound, to teach him to attend to it, respond to it, to produce sounds himself. More specific goals should respect the degree of deafness and other individual differences but they will include the development of speech and oral language. These goals, which are derived from the child's individual needs, will then be broken down into short term objectives, such as gross sound discrimination, the development of speech elements or voice building.

The goals for each child must be realistic. If, on the one hand, there is no hearing present, an attempt to stimulate it will result in failure, with possible psychological consequences for both child and teacher. If, on the other hand, residual hearing is neglected, vision may predominate to the detriment of the child's future auditory development. There is empirical evidence to indicate that when vision is firmly established as the lead sense, a shift to auditory function is difficult to effectuate in hearing handicapped children (Whetnall and Fry, 1964, Watson, 1962, Gaeth, 1960, Costello, 1966). A compromise, a decision to habilitate the child through equal parts of visual and auditory stimulation, may prove to be insufficient for some who need greater emphasis upon either vision or hearing. Thus, educators need support from audiologists to develop goals which reflect a realistic appraisal of the hearing status.

The goal of many audiologists is to fit a hearing aid to a child in infancy and for the child to wear the instrument continuously thereafter. In this event the child identifies with the aid and it becomes incorporated into his self-image; it then functions as a part of his ear and so should seldom be taken off or even turned off (Dale, 1962, Costello, 1966). However, many of us are acquainted with children in whom the hearing aid is accepted but not the hearing that goes with it, for the aids are often switched off or otherwise nonfunctional when we see them. The problem here seems to be that we have confused the hearing aid with the utilization of hearing, which should have been our goal—and the goal of the child. If the first goal of auditory training is to teach the child to obtain information through the use of his residual hearing, the second goal should be to motivate him to do so. The challenge is to make sound meaningful and rewarding so that he wants to hear and will listen. At the very least, hearing should serve a monitoring function, as another contact with the world.

General goals for auditory training with deaf children have been proposed by Hudgins and Watson and reported by Sanders (1972). They include: (1) better reception of speech, (2) better expressive speech and better oral language, (3) better academic achievement, and (4) better psycho-social adjustment. These goals are educational ones primarily, seeking to relate progress in the development of communication skills to auditory training, but are also influenced by many other factors, physical, psychological and educational. Auditory training is inseparable from speech and language, however, and the goals are valid ones for deaf children.

Grouping

Audiologists are in agreement that hearing characteristics should be considered in the placement of hearing handicapped children (Dale, 1962; Ross, 1972; Watson, 1962). Their main recourse to placement, however, is through referral. In France, England, Holland and Russia there are special schools for partially deaf (hard-of-hearing) children (Wright, 1969; Mikaelyan, 1968; Hirsch, 1963) Other European countries have special classes in regular schools for them. In the United States, a national survey of public school programs by Redell (1970) found 31 percent of the reporting school districts with no program for the hearing impaired and placing their hard-of-hearing children in facilities for the deaf. Although educators might agree that these children would be better placed in regular schools receiving supporting services, their transfer is difficult once they have developed the language patterns of deaf children. Schools for the deaf that accept hard-of-hearing children should program for them, although it is difficult to do so because of their small number and scatter in age. Such children usually can learn well through auditory methods and an intensive program of auditory work is needed to improve their language and overcome the educational lag that keeps them from attending regular schools.

In facilities for the deaf there are only a few choices in programming for children on the basis of hearing level: (1) individual work in auditory training (Dale, 1962), (2) small group lessons with the class divided (Watson, 1962), or (3) combining classes to achieve temporary groupings, perhaps without regard for academic levels.

The current trend toward continual auditory stimulation for all makes the solution by regrouping more difficult, for each child may be presumed to be receiving as much stimulation as he needs. Such is, of course, not the case when their hearing characteristics are very disparate. Severely hearing impaired, or educationally deaf children with losses between 70 and 90 decibels usually have sufficient auditory potential to obtain considerable information through hearing, and many can develop understanding of speech through hearing with amplification. This should justify their separate attention in auditory training activities emphasizing speech discrimination and auditory language development. Deaf children with losses in excess of 90 dB, however, usually are extremely limited in auditory discrimination, and hearing may add only slightly to their effective visual communication (Frisina, 1964; Erber, 1972). Thus, their auditory training should emphasize the improvement of expressive speech and language characteristics and rely more heavily upon vision than auditory feedback for reinforcement. Individual children may benefit sufficiently from training to shift upward to a higher functional level, as, for example, severely hearing impaired children do who learn to use the telephone, but the upper limits seem to be physiological ones imposed by the hearing impairment itself (Frisina, 1964).

Wedenberg (1970) of Sweden, Guberina (1970) of Yugoslavia and others have demonstrated remarkable success in developing the speech discrimination of profoundly deaf children with the aid of special amplifiers. It is remarkable because the amount of information available to low frequency hearing is so small. The fundamental frequency of the human voice ranges from 90 cps for a man to 300 cps for a woman (Fletcher, 1953). The formant frequencies, which give their unique quality to vowels and voice consonants, are higher and, although some further effects occur in starting and stopping the voice with consonants, the information contained in this too is small when the auditory range is so greatly restricted. It is hypothecated that vibration adds tactile sensation to labyrinthine stimulation in the profoundly deaf. Nevertheless, the upper limit of vibration as reported by Wedenberg is only 500–750 Hz and the benefits claimed for this kind of stimulation are mainly in the prosody of speech, that is, temporal patterns, voicing, pitch, rhythm, stress, duration and rate (Ross, et al, 1973; Watson, 1962; Boothroyd, 1970). Although we need be mindful that speech in the profoundly deaf need not depend upon the presence of any residual hearing, these children benefit little from conventional methods of auditory training and should be removed from competition in auditory activities with the less severely impaired.

To reiterate: Auditory training will be most effective if children are grouped so that the work can be directed toward similar goals. Severely hearing impaired or educationally deaf children with hearing levels above 90 decibels, who obtain considerable benefit from amplification, who progress at a faster rate in speech development, who provide a reasonably good auditory pattern for each other, who can derive some benefit from auto-instructional instruments, such as the Language Master, might be grouped together with the occasional hard-of-hearing child who has no better place to go. The deaf with residual hearing who can hear their own voices with amplification, but who have little or no discrimination for the speech of others, can improve their own speech and oral language patterns through listening. They should do better together than with the first group, who progress at a faster rate in auditory work. The profoundly deaf and the completely deaf who depend entirely on vision and vibration could be excused from auditory training, but their usual management is as visually functioning children in an auditory program. That is, they are allowed to lipread when others must listen alone. There is nothing wrong with this so long as they succeed. These children are not adequately identified and much confusion exists around them. They need to be tested with hearing aids before the final decision is made regarding their potential. However, they tend to identify themselves through lack of response in auditory work and their reliance on vibration.

Evaluation

The initial evaluation of a hearing impaired child should be comprehensive and seek to achieve a differential diagnosis of the problems that may be present. However, very sophisticated testing of hearing characteristics must wait on auditory experience, and the manifestations of auditory perceptual and language problems are subtle and difficult to diagnosis in the young child. Therefore, periodic re-evaluation is needed, and the cooperation, even the collaboration, of the teacher may be required to obtain best results. For example, the teacher may prepare the child for a speech reception test by teaching the words and practicing them in auditory training exercises.

The teacher's observations of the status and use of hearing also are important and should be reported to the audiologist. Hearing loss in some children is progressive. Boothroyd (1972) has begun a study of children whose hearing has declined over a period of years in a residential school in order to determine when the decrease in hearing level occurred. This has implications for education but is difficult to determine because the hearing of many children also fluctuates. In a study of primary-age children at Indiana School for the Deaf in 1972, Dempsey found more than half of them to have conductive pathology registering on an acoustic impedance meter. The pathology is probably temporary in most cases, but for a time it adds another increment of hearing loss to the level of neurosensory deafness already present in these children.

Progress is evaluated relative to the goals and objectives which were previously determined for each child in terms of his individual characteristics. For speech reception, it is important to test auditorily with and without speechreading as well as for speechreading alone. For expressive speech, tapes of oral reading and spontaneous speech may be kept for comparison and rated on a scale for improvement in intelligibility and language use. Zink (1973) has developed a grid for recording progress called "Rehabilitative and Educational Audiology Profile." It provides graphically for hearing test scores, unaided and with amplification; similarly for speechreading; for language test scores and speech intelligibility; as well as for data regarding intelligence, motor development, social maturity, and an appraisal of educational and social adjustment. Where, because of the severity of deafness, the goals have been stated in general terms of academic achievement and psycho-social adjustment, the effect of auditory training is more difficult to separate from other influences. Here subjective impressions of the use of oral language in communication; in responsiveness to sound; of improvement in voice, rate, and rhythm of speech; and in psychological well-being may be valid observations worthy of notation.

SUMMARY

Auditory training is justified for children for whom sound can add information to experience. The population of many residential schools for the deaf includes moderately and severely hearing impaired as well as deaf children. Goals and objectives suitable to their hearing levels should be developed, and insofar as possible children with similar hearing levels should be grouped together for auditory training. A suitable goal for hard-of-hearing children is to exploit their hearing fully to maintain normal speech and language patterns. Severely impaired, or educationally deaf children with hearing levels better than 90 decibels should have intensive auditory training for the development of auditory receptive language as well as oral expressive language. Deaf children with losses greater than 90 decibels should be considered in two groups, one with sufficient residual hearing to improve in expressive speech characteristics through auditory feedback, the other with no serviceable hearing for speech. The second group may be approached through vibratory stimulation but derive little benefit from ordinary auditory training methods. Progress in auditory training should be evaluated according to the goals and objectives for each child which are based upon his individual differences.

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MY NOT-SO-SECRET LOVE, MIVR (MERV)

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Anyone who is expecting a lofty, intellectual dissertation will be disappointed. All you are going to get is a true confession—a love story. The story of my not-so-secret love who is called Merv.

It was a beautiful late summer morning when I first heard of him. The principal entered my classroom with the question, "How would you like to have Merv for an assistant?"

With forty children on what seemed to be forty different levels in four language classes, do you think I'd refuse assistance from the devil himself? Not me. I replied, "Sure. Who is he? When does he arrive?"

About six weeks later, after the electricians and various other people had come and gone, Merv arrived. During that six weeks, I discovered that his real name is MIVR and is translated as Mediated Interaction Visual Response. Details of his background can be found in an article by Dr. Raymond Wyman in the November, 1969, *Annals.* And now you lucky people get to see what he looked like when he and I lived—I mean worked—together.

Also during that six weeks of waiting for MIVR's arrival, my supervisor, principal and I had chosen a vocabulary list to be used. The one we finally agreed on, with some adaptations, was developed by a committee of teachers at the Central Institute for the Deaf and first published in 1950. I understand that CID no longer uses this list but that doesn't prevent it being a good launching pad. Starting with the names of animals on Level I of this list, simple outline drawings were made by our Media Center artist and basic sentences written to go with the drawings. Then an overhead transparency was made.

Later on, after we were satisfied that MIVR and the Texas School for the Deaf Language Arts Transparencies were a boon to teaching language, better pictures were drawn, some of the sentences were revised and transparencies were made in color on Diazo film. The complete set contains transparencies for 484 words or phrases, 176 of which are verbs. Besides verbs, the categories included are names of animals, food, objects in the environment, clothes, rooms and furniture, prepositions, and partitives. Even though a MIVR set-up may not be possible, the LAT are helpful and are in use at nine County-wide Day Schools in Texas and four sets are in use on TSD campus.

The teaching sequence went something like this: The transparency of a bear was shown to the class with all the language masked. The students were asked to name the animal. Most of them would sign bear. They were then asked to fingerspell the word. Those who could do so were encouraged to help others. Next the word bear under the picture on the teacher's overhead projector was exposed and the students spelled it again. At this point, if a discussion of bears hadn't already started, one was stimulated with questions. Where do bears live? What do they eat? What color are they? How big are they? Anything and everything they knew or thought about bears, they were encouraged to say. The TV show, "Gentle Ben," was very popular at that time so the younger children "knew" a lot and had a good many misconceptions about the value of bears as pets.

Discussion was terminated by exposing the first sentence and selecting a child to translate it to signs. Another child translated the next sentence and so on. To fingerspell the whole sentence was not permitted—that was a sure sign the child who spelled "animal" did not know the word. Unknown words detected in this way were explained, sometimes by other children in the class. This device of directing the attention of all to one child who explained something was a great aid in building self-confidence and the desire to achieve. Eventually the children learned to ask beforehand if they did not know a word instead of trying to bluff.

After all the sentences were read, everything except the picture and the incomplete sentence was masked. Each student wrote the word to fill in the blank on his own projector film and showed it to me for confirmation. Immediate corrections were made by the individual if needed.

The next step was to get some expressive language out of the students. A collection of pictures of bears had been made, were displayed one at a time and the students requested to write an appropriate sentence, using the word bear. If they couldn't think of anything else, they would write the same sentences as had been on the transparency but were told it would be more fun to try to write something different. If they needed a word, they could ask how to spell it. They could even ask for a whole sentence but this seldom happened. As each student completed his sentence, he turned on his overhead projector and got confirmation or help in correcting.

There was a lot of cheating at first. Slower or less self-confident children would wait for the quicker ones to finish and copy someone's mistakes. After that was pointed out a few times, copying diminished and vanished. Their offerings also became more varied as original sentences by classmates were pointed out and praised. Corrections were offered in as matter-of-fact a tone as possible. Ridicule of classmates' mistakes was nipped in the bud by asking, "Do you like people to laugh at you?" It was interesting to see how one small success could lead to greater success.

One student in the lowest achieving class had been in school eight years. It seemed to me that he could not have enjoyed one moment of success in all that time. His frustration and inability to write a correct sentence continued in spite of MIVR. Then one wonderful day this boy wrote a perfect question form and every one of his classmates failed. *His* was the good example for *them* to copy! An ear to ear grin lasted the rest of that class period and marked the beginning of the change from a negative to a more positive attitude.

When boredom threatened to become a problem with the slower classes, various games were invented. One was riddles. A number of clues were written and the students read these short paragraphs and wrote the answer. This required a skill of recall or reasoning that was very difficult for them at first but they finally became able to guess most of them on the first reading. Can you guess the answer to this sample riddle?

> I am big. I like honey. I have fur. I sleep in winter. I am a _________.

Compare that with this one to see the reading comprehension required:

> I am not big. I make honey. I have wings. I sleep in winter. I am a _________.

Another well-liked game was to divide into teams and take turns spelling the names of animals or objects. When one member of a team missed, a member of the other team could try until someone got it right—or all failed. The only reward for the winning team was the honor of being the winner. This game led to the children making lists of words learned and voluntarily practicing spelling with each other after school.

We were not limited to the vocabulary on the transparencies but also introduced related vocabulary, depending on the agility of the class. In connection with bears, for example, the two higher classes learned the words *hibernate* and *hibernation* and how to use them. One day in spring, I accused a girl of being asleep in class and she said, "Yes, I feel like I am in hibernation." That didn't say much for my teaching that day but she got A for the correct sentence. Then we worked on the meaning and use of "spring fever."

How successful was MIVR?

The slowest class did not complete study of all the words on the first level during that school year. The next higher class went through the first two levels of nouns and the first level verbs. The two classes which entered the program with more highly developed vocabulary and writing ability were given a quick run through the whole set of transparencies. To increase their ability to express themselves on abstract as well as concrete levels, the Language Arts Transparencies developed by NERMCD were used with MIVR. One of these classes romped through this and went on to more advanced sentence structure. The other class did not go all the way through this latter series.

Now that three years have gone by, I would like to report that every one of those forty children MIVR and I had are ready to enter college. In another five years, watch out for your job! That's what I'd like to report.

What I must honestly tell you is this: MIVR was discontinued to make room for the CAI lab and I was assigned to writing programmed instructional materials and later to educational TV production. Most of those forty children went into an intensive vocational training program. I was able to trace the academic progress of ten students through

Stanford Achievement Test Scores. For the sake of brevity, only the total gain or loss scores are presented here.

I believe the real test and proof of MIVR's success lies in one of the last letters home of 1970. A boy who had no writing vocabulary in the fall of 1969 could write all by himself in May, 1970:

> Daer mother,
> I home soon. You happy home me.
> Love,

Further proof lies in a two-page account of a girl's weekend at home which finished with: My horse was feeling ornery and bucked me off. I landed in some prickly pear. YEEEOWCH!

That is the goal MIVR helped the children reach—expressive language to fit life situations. Is it any wonder I still love MIVR in spite of three years of separation? I am glad to share him with you but if—or when—I go back to the classroom, I hope MIVR will be there with me.

Student number	Word meaning	Paragraph meaning	Spelling	Language	Overall median	Gain or loss
1	3.0	2.6	6.2	4.3	4.9	1.9
	2.5	3.0		2.9	3.0	
2	3.1	3.2	5.1	2.8	4.2	1.1
	2.5	2.2		3.1	3.1	
3	3.6	2.5	5.7	4.4	5.1	1.7
	3.0	3.4	4.3	3.4	3.4	
4	3.6	3.6	2.3	2.6	3.2	
	3.6	2.9	3.1	2.6	3.4	−.2
5	3.1	3.7	4.6	3.1	3.7	.6
	3.0	2.6	3.0	3.1	3.1	
6	3.5	3.7	5.4	3.6	3.9	.2
	4.7	3.0	4.4	3.7	3.7	
7	3.2	4.6	4.3	4.3	4.3	1.0
	2.1	2.8	3.8	3.1	3.3	
8	4.2	3.2	5.9	5.1	5.0	2.0
	2.1	2.6		3.7	3.0	
9	3.1	3.8	5.1	3.8	3.9	1.0
	2.7	3.1		2.9	2.9	
10	4.6	4.7	6.7	3.7	4.4	.8
	3.2	2.7	4.2	3.5	3.6	

Note: 1st row of figures are May 1972, Stanford Achievement Test scores; 2d row, May 1969.

DEAF-BLIND PROGRAM AT THE WEST VIRGINIA SCHOOLS FOR THE DEAF AND THE BLIND

Eldon E. Shipman, superintendent, West Virginia Schools for the Deaf and Blind, Romney

Our previous Deaf-Blind Program was phased out in 1938 when our two students completed the program.

In the Spring of 1972 we were contacted by our State Department of Special Education who inquired if we would be willing to operate a program for the deaf-blind if the State Department funded it. We felt that we could make available a limited amount of space for this and submitted a proposal for an educable deaf-blind program for six youngsters. The figure of six was determined by our space available and the dollars available.

The proposal was accepted after the word educable was removed. On October 1, 1972, the six children selected by the State Department arrived. The teacher-director, three teacher-aides (two of whom had had previous experience with the deaf-blind) and the houseparents we had selected met with the parents in a group session.

Early in the year we made video tapes of the youngsters to show what they could do including attempts at speech. During the year we kept progress reports on them and attempted to keep the parents well informed. Two of the youngsters lived over 300 miles from Romney. Of the six, we felt that we had two that might have average I.Q.'s, two below average and two well below average in their I.Q.'s.

We felt that parent awareness and participation was important. Therefore, we had meetings with the parents prior to the Christmas vacation, Easter vacation and Summer vacation. We also made video tapes of each child at periodic intervals. It was interesting to see the difference between those made the first time and the last ones made.

It appears that there may be an additional six West Virginia youngsters who should be in a program such as this. We do not have the space or the funds for them at this time.

EARLY EDUCATION

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Organized training of infants has recently been widely attempted with results that demonstrate the value of early intervention (Caldwell, 1970: 417–426). However, many of us have long realized the urgency of reaching the hearing impaired child during his critical learning years. In 1958, at Central Institute for the Deaf, we began a program of early intervention which has recently been funded under the Handicapped Children's Early Education Program (P.L. 91–230).

There are three phases to this project—parent education, child education and research relative to both. It is to these topics that we plan to address ourselves today. Since the latter two topics will be handled by the others on the panel, I will discuss the parent training phase.

As is apparent, the basic approach in this phase is to help both parents, but especially the mother, with the young child at home. As Hess & Shipman (1967) argue, the home—the family—through experiences shapes the child's cognitive and particularly his language development. It is not by accident, as Van Uden points out (1968), that the native language is called the "Mother Tongue."

Parents have impact upon their child's language and intellectual development in several ways:

1. *They need to demand and expect high achievement.*—Parent's expectancies for their children have been known to correlate with the child's overall achievement. In a program of parent education for the hearing impaired child, we must help set positive goals. Unfortunately, the professionals often operating under the guise of objectivity, accentuate the negative—they are all too willing to tell the parents what "the deaf" can't do. Parents are not sophisticated consumers of the so-called research. Parents range from people for whom their child is their first encounter with hearing impairment, to those who are themselves deaf. Their expectancies accordingly vary greatly. It is up to the intervener to carefully analyze each child's potential and channel the parents' demands to a realistically high level.

2. *There needs to be side and varied Verbal Interaction Between Parent and Child.*—Research findings are becoming available regarding parent

child interaction patterns in a home setting and they provide different data than those studies of children brought up in institutions, such as orphanages. An environment giving limited contacts with adults and with generally low levels of stimulation leads to retarded intellectual and social development. Rheingold and Bayley (1959) listed the mother's activities recorded in a normal environment in order of magnitude as: holds, talks, talks to, feeds, and looks at the face, whereas those performed in an institution were holds, feeds, looks at face, and finally talks to. Rosenberg and others (1969) have found that mothers of first-born infants interacted significantly more often with their infants than mothers of several children. Documentation of first-borns is particularly interesting in that the intellectual advantages of first-borns and only children have been reported frequently. Escalona (1968) reported that very frequent contacts with mothers and a highly stimulating home environment were associated with accelerated development. Stimulation is not a unitary dimension but it seems to include: attending, playing, patting, rocking and importantly, talking, chatting and singing.

It is the task of the person charged with early intervention to see that these things transpire in the home of a hearing impaired child not occasionally but constantly. At the same time, the same person may have to stand ready to offer reinforcement to the mother for what she does well. Her infant may not be reinforcing her with the coos, laughs, babbles and other ways hearing children do.

3. *Parents need to participate in the mental and cognitive activities with their child.*—Another important type of behavior from the standpoint of future success, is the mother's tendency to become engaged with the young child's mental activity. Her ability to teach her child in ways that help him define and master tasks influences his cognitive growth. Contrast for a minute the mother playing with her child who simply says:

> "Put it there."

with another mother playing the same game who says,

> "The red circle goes in this hole. See it's round also. No, the blue squares have four sides. They go in this place. It has four sides too."

The latter mother gives information as well as a model. She not only gives the child specific information but she provides him with immediate feedback on how well he has done.

Many parents have not had training for this type of stimulation as Head Start and Day Care people will quickly tell you. Contrary to the notion that parenting is instinctive, evidence is accumulating that it is learned.

Actually, the parent has several roles to learn but of much importance are those of mediator, modeler and reinforcer (Miller, 1969). The parent *mediates* the environment through such strategies as vocalizing to the child, naming objects, playing games, and in general talking to and with the child all of the time. She *models* by coordinating the experience the child is having with the appropriate language. Sorting the laundry she can utilize categories as well as names of items, e.g.,

> Daddy's shirt is blue.
> Your dress is blue, too.
> Where are your blue socks?
> Here is a blue towel.

Finding a caterpillar in the yard, she might model;

Look, Billy, a caterpillar.
Feel how soft it is.
Look at it crawl.

The mother *reinforces* continually, using a positive feedback system most often. (e.g., praise rather than criticism) She also reinforces by helping the child to accomplish his desires because he vocalized. When he utters something she does everything possible to give him his desire. So must the parent of the hearing impaired child.

4. *The mother's strategies as a teacher in the home need to be shaped.*—White and his co-workers at Harvard (1969) characterize five distinct types of mothers each of whom had a distinct strategy.

The first type, the woman who usually produced an exceptional child became known as the Super Mother. She educated her child constantly, but always in a play manner, not formally or rigidly. She taught casually, as part of her daily routine, and enjoyed and accepted her child at his level of development. She read to him, sang songs, showed him how to drop wooden shapes in a drop-box, etc., and did a *lot of talking* to her child. It is as if mother were describing everything *she did.* Sometimes it is parallel talk, describing everything the *child does* but frequently it is modeling, giving language to the *concept* she observes the child having. She might model for him while on a walk:

Look. There's a truck.
That's a big red truck.
It's a moving truck.
I guess new people are moving in.

She takes an idea, elaborates upon it, and adds bits of relevant information. These short but frequent episodes help to increase the toddler's language and general fund of knowledge.

Type two, White referred to as the Almost Mother who tried but didn't reach the same high standards. Although she enjoyed and accepted her child, she had trouble understanding or satisfying his needs. She missed many opportunities to teach. On a walk, she is likely to say, about the same truck observed by the other mother, simply, "See the truck." That is as far as it goes. She just lacks the capacity to make appropriate associations that help language and/or cognition.

The third type of mother was called the Overwhelmed Mother. She was overcome with work (or grief) and her children spent their time in aimless and unmonitored behavior.

The last two types are directly opposite, the Smothering Mother and the Zoo Keeper Mother, but both produce negative effects. The Smothering Mother pushes her child to achieve. She is so responsive to his every little need that he rarely has an opportunity to take the initiative or explore for himself. This mother spends hour after hour drilling. The child, in turn, suffers in the affective domain.

The Zoo Keeper Mother, on the other hand, spends too little time with her child. She is too involved in club work, organizations for the improvement of children, housekeeping chores, etc., to find the time to talk or play with her own child.

I have observed parents, themselves deaf, who were Super Mothers. Unfortunately, hearing parents are usually still experiencing the grief syndrome when we begin with them. The dropping to the child's eye level, waiting for his attention and then feeding in the enriched language comes so easy for most of our deaf mothers. They, in turn, get reinforced because they are near enough to the child to pick up his response. These are strategies we want to develop with all the parents.

5. *The amount of diffuse intellectual stimulation provided in the home by parents is important.*—Children who do well tend to come from homes where parents are involved in a variety of activities which may indirectly stimulate their children intellectually. Books, magazines and other materials are available to explore and activities are planned to arouse curiosity. More importantly, however, for the hearing impaired child is that he is *included* in the activities about the house, the grocery store, the park, whatever it might be that takes the attention of the family and especially mother. Included and *talked to* about what is going on and as he matures, *talked with* about the experience.

6. *Affective relation with the child has influence upon his achievement level.*—There is evidence that a parent's support and affection for the child has a direct relation to his achievement. Clearly children need emotional warmth, security and a sense of belonging. Our hope in working with parents is to assist them through the reaction period when there is emotional disorganization, which accompanies discovery of deafness. We hope to have them achieve an adaptation to the handicap and come to applying their efforts fruitfully with the hearing impaired child.

7. *Parents need to regulate the child's behavior through encouraging self-reliance and independence.*—Today's parents need assistance in desirable rearing practices. The assistance may range from showing parents how to help their child dress and feed himself to making the child responsible for his own belongings. This includes helping parents, and through the parent, the child gains control over the hearing aid. It may mean helping them in allowing their child to make choices and aiding them in knowing the choices that are appropriate for the child's age and interest. Through the parent, we hope to achieve social maturity for the hearing impaired child.

8. *Another goal relative to behavior is that of establishing consistent control over the time from the family.*—Parents frequently need help not only in setting limits but they need to be convinced that they must enforce the limits consistently overtime. Furthermore, there must be consistency between parents and between grandparents, baby sitters, et al. Expectations enter into this aspect as well as language and intelligence and hearing impaired children must learn at home appropriate learning behavior. Permissivism and over indulgence is not conducive to learning. The control strategies vary from family to family and it is the task of the person intervening to find those that are comfortable for each set of parents. The change from physical to verbal controls needs to be demonstrated and the limitations imposed by the handicap need interpretation.

HOME DEMONSTRATION CENTER

The program takes place in a Home Demonstration Center which is housed in two modest apartments. This training site simulates a typical environment that a child might experience in his own home. That is, the rooms include: kitchens, living rooms, bedrooms, outside yard, etc. The usual procedure in the sessions involves the teacher and/or parent engaging the child in activities comparable to his own home activities. For example, the mother and child might wash dishes in the kitchen, make the bed in the bedroom, or dust the furniture in the living room. In this setting, the intervener (the teacher) during a weekly, one hour session observes and works with the parent, who, in turn works with the child.

The intervener or teacher/counselor, as we sometimes call her, may be willing and eager to initiate educational techniques but the parent may still be coping with the shock of the diagnostic findings. Furthermore, the teacher may also be dealing with parents who do not easily learn from verbal instructions. The teacher in the parent-centered phase of the program must adjust her strategies to the parent's needs. She may at any one time be:

A *reinforcer* because she supports everything positive that the mother does.

An *activity director* giving ideas to the parent who is unsure of what to do.

A *modeler* demonstrating activities appropriate for the parent to perform.

A *teacher* communicating rationale and objectives to the parents for what they are to do.

An *information seeker and giver*, sharing information about the child's language growth, hearing loss, hearing aids, educational systems, acupuncture, and any other topic remotely or directly related to handicaps and deafness in particular.

Any single intervention often contains many teaching strategies. Nineteen were identified by Nardine (1972). They included language expansion, language imitation, language repetition directed to the child, interpreting the child's efforts to the mother, strategy clarification, categorization of objects and actions, to name a few. Needless to say, the role of lipreading and amplification needs frequent and meaningful interpretation to the parent who is providing the input.

Since our ultimate goal for the child is speech, the immediate goals relate to that objective. These cover discussion on the development of speech in normal children and in hearing impaired with films and actual cases of children from the school. This latter is certainly an important dimension in the parent-centered phase because seeing and hearing the children in the school help parents with their own goal setting and expectancy level. The immediate goals might include getting to the child's eye level, within the range of his hearing aid and speaking within his attention range. Parents need to know about the Function and Content of Language before we concern them with the Form. In other words, they need to know, "when to talk" and "what to talk about" before we concern them with "how to talk."

Schlesinger and Meadow (1972), in a recent publication, addressed themselves to the qualifications of the intervener. These were helpful, warm, accepting, genuine, understanding, objective, confident, and informed with the ability to listen as well as talk with people under stress. They continue that that person be able to convey knowledge authoritatively and with confidence but without superiority or authoritarianism.

Our intervention programs are developmental rather than remedial. This brief paper is not the place to go into detail regarding the specific content of our Home Demonstration Program but, briefly, we feel that early verbal stimulation is just as critical for the hearing impaired child as Colby (1968) or Brown (1964) and others maintain it is for the hearing child. Language acquisition grows out of interaction with people. The hearing impaired child also needs a large sample of information from which to abstract his rules. He needs the same interplay with people in his environment.

Since each child is unique and each family make-up differs, the actual content of instruction for the parent varies greatly. Possibly, it would be useful to list what may be the common threads for facilitation of language and cognitive development.

1. We want to enable parents to become effective educational agents with their own children.
2. By assisting parents to understand hearing and the implications of a hearing loss, we hope to have them use amplification and have the child look at their lips for giving the child language models.
3. We want the parent to model language appropriate to the situation within the environment and to expand the child's attempts.
4. We help the parent to assist the child to comprehension and to employ simple reinforcement procedures.
5. Using the work with their own children as the starting point, we have been concerned with helping parents toward better coping skills in all of their encounters.

Certainly, a home demonstration program is not a panacea for the problems of the hearing impaired child. Enabling the parent to become a more effective educational agent however can have an important contribution to the child's *experiences* which govern his cognitive development.

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DEVELOPMENTAL VISION

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When I talked with Mrs. Haines initially she, of course, needed a title for the presentation. I was quite happy to suggest the present topic. With this title, I can feel free to wander all over the place talking about vision and never be off of the subject. This is because vision is a learned, developed, and trainable skill. You are not born with vision, however, you are born with eyesight.

Before we go any further, I think we better get together on what we mean by vision and sight. For the purpose of this paper I will define them as follows:

Sight—acuity, 20/20.

Vision—the process by which a person, through the use of prior experience, interprets, responds and makes use of what is seen in order to get information. (This is followed up by a demonstration using Renshaw's Cow picture).

Since we now have an idea of what vision is, let's take a look at how it develops in each and everyone of us.

At the moment of birth, infants are able to respond to light, sound, and touch on reflex levels. Also, the infant can fixate a light with both eyes and make conjugal eye movements. In addition, optokinetic nystagmus[1] can be produced at birth. From this point on, the child will be learning how to use his senses in a purposeful way.

The baby's first sense to be used for information gathering is the oral sense—the mouth. The child initially derives its greatest pleasure from this sense. He also learns quickly how to respond with pleasure or displeasure through this modality. The infant starts with its mouth as the main information gathering source, this eventually gives way to the tactile sense (supplemented by hearing and smell) and lastly to the visual system.

The infant immediately starts associating what he sees with other activities. Very shortly he learns to identify his bottle, mother, blanket, crib, etc., by sight. This ability has been reinforced, of course, by all the other senses so that everything also tastes, smells, feels and sounds correctly. This interplay between the senses goes on throughout life, but never more than in the first few precious years.

The visual functions develop quite rapidly in a human being. By four weeks of age the infant stares somewhat vaguely at his surroundings, is attracted by large areas of light and can give active, sustained attention to an object of interest brought within a few inches of his eyes. At eight weeks he is intrigued by bright and shiny objects. Also, he can demonstrate ocular accommodation[2] and convergence.[3] By twelve weeks of age, he shows interest in movement, shadows and patterns, these are the basis for development of visual acuity. Also at this time he shows visual predilection for his hands.

By the age of four months the young child responds vividly to visual challenges. He can follow a target in a 180° arc reversing his motion. He rotates his head to shift regard from one object to another.

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[1] An involuntary movement of the eye, either oscillatory or with slow and fast phases in alternate directions. In this case, produced by the motion of a spinning drum with black and white stripes on it.

[2] Ability to focus the eye in order to see clearly.

[3] Ability to turn the eyes in together to look at an object of regard or interest.

Seeing is taking on a certain priority. He will interrupt his feeding to regard a person in the room. His eyes brighten as they have never brightened before. The oculomotor [4] organization which occurs in the first sixteen weeks of life is tremendous. Never again will the infant advance at the same swift pace in the patterning of his visual functions.

At six months of age the infant is becoming perceptually aware. He is a little shy of strangers. He is aware of strange surroundings and he senses a reorientation when his crib is shifted to a new position. In addition the 24 week old child shows more hand and eye coordination as well as eye and mouth coordination. He is able to pick out features of a person's face.

The 8 month old is expending his powers of touch and vision in countless variations. He also watches with new penetration the actions and movements of people around him. Concept of distance and location are bringing a new awareness to him primarily through the auditory modality. He localizes sight and sounds well beyond the reach of his arms.

By the end of the first year of life the child is beginning to organize his spatial domain, his mobility is well established. He identifies places by going to them. His visual perceptions and manipulations show progress. He perceives emotional expressions. His acuity allows him to visually "handle" his world. He is capable of approximately 75% of normal acuity.

The 18 month old shows a slightly more refined visual pattern than before. However, he is best described as an explorer. This age is exploring space with unlimited abandon. He likes to investigate everyplace in his immediate environment, he knows where things belong; he enjoys putting things into containers. In using blocks the child has difficulty building horizontally, but builds towers with relative ease. Along with the upright posture of this age, he must begin developing new visual motor coordinations which are linked to the more primitive patterns. It is at this point that the eyes may first be seen deviating from each other.

Visually the two year old is becoming more mature. He is now capable of seeing 20/20. He watches what he does as he does it. He can look and then act. He uses eyes and hands in more flexible association. By all these tokens, his visual behavior is "becoming of Age."

Let us stop for a moment and consider the special child that you are interested in—the deaf child. This child presents an interesting paradox. We have seen that vision is dependent on the other senses for its development. In the deaf child, of course, one of the major senses is missing or at least defective and therefore we would have to assume that visual development would be handicapped. But at the same time this child must depend even more on vision because of the lack of the auditory stimulation. This child indeed has some special visual problems that are not easily remedied.

Now we'll return to our visual developing youngster. Between the ages of 2–6, this child is becoming more skillful in the use of his various functions. He does this by the interplay of his senses and skills and by trial and error methods. As he becomes more skillful in finding out about himself and his environment, his eyes begin playing a more leading and dominant role. By age two the visual system is complete, but not mature. A visual task cannot be sustained for long periods nor will he be capable of sustained work for another 6 years.

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[4] Here I simply mean the mechanical movements of the eyes.

The 3 year old can copy a circle and most of the time the cross.[5] He will add legs and eyes to the incomplete man.[6] He can use his eyes and hands more independently and with self-containment. He can look away and then return to the task in hand. He displays new interest in landmarks, recognizing and anticipating them.

The 4 year old makes a triangle poorly. He rounds the corners off a square. He draws the leg, foot and arm of the incomplete man all too long. The 4 year old does everything with abandon which includes his motor activities, speech and various antics.

The 5 year old is occupied with the organization of an inner world of concrete perceptions. He likes to single out specific details of familiar features without losing an awareness of the total entity. Ease and economy of movement are present with finer coordination. He can draw the square and the divided rectangle in the vertical orientation. He still has trouble with the triangle. On the incomplete man he completes the body line, usually adds rest of hair and an ear that is ill-shaped.

At 6 the youngster is becoming aware of different shades of color. This is perhaps so that he may express his moods in color. He is a child of many moods during this year. He is becoming interested in oblique directionality, but finds it quite difficult to execute an oblique movement. He can make a triangle with difficulty. On the incomplete man double lines for arms and legs may appear.

Seven is something of a perfectionist. He tries to finish everything whenever possible. It is also an age of slowing down and withdrawal. Visually it seems that seven is preparing for eight. For the 8 year old has matured visually. He can now sustain visual tasks. He has more facility than ever before. The copy forms and incomplete man are handled with ease. Near and far vision are in better balance and interplay, as shown by the greater ease with which he handles both blackboard and seat work.

Ages 9 and 10 show even more refinements. More equilibrium within himself is developed as well as more visual prowess.

After age 8 all visual changes seen can be said to be the result of stress to the visual system. Therefore when nearsightedness, astigmatism, strabismus, etc., are seen they have to be looked at on a compensatory action of the system to relieve the strain. The visual system then has to be helped by the use of glasses and/or visual therapy. The method or methods employed will of course be determined by what the actual problem is found to be by a complete visual analysis.

To help the reader put this paper in perspective, he must realize that it is a bare outline. It doesn't even scratch the surface of this total field of visual development. I hope that a few will become interested enough to follow the suggested reading material at the end of this presentation, so that they may get an inkling of what an awesome potential we have in vision.

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[5] Referring to Winter Haven Visual Copy Forms which consist of a circle, cross, square, triangle, diamond, and divided rectangle.

[6] Product of Optometric Extension Program's child care section. A figure of a man is presented with parts missing, the child fills in the missing parts.

DISCUSSION

In order to prevent eye problems, they must be caught at a very young age. Basically, it is too late by the time they reach kindergarten. However, there are still some things that kindergarten or first grade teachers can do, but real prevention should be done before three or four years of age.

The child who is having visual problems may be the one who avoids certain tasks. The child may blink, rub his eyes, look around to avoid tasks. The Snellen Chart at 20 feet is not a conclusive indication of school progress. Often ones that fail with this test are better students. School work is usually done at 18 inches (eye to desk-top) instead of at 20 feet.

Teachers are better able to locate problems than parents.

We use two tests for developmental problems. We find out where the child is (what stage of development), then work from there. Many school problems are questions of unsequential development of eyesight (ocular-motor problems.)

Personally, I feel the preschool program should be focused on readiness, not reading. Stress needs to be placed on movement; coordination. Early reading at this age can lead to visual problems at 7 or 8. Vision is having the use of prior experiences and experiences are what should be stressed at preschool age.

If you are fairly certain that a child has an eye problem and you are waiting for an exam, there are a few things that you can do. Move him to the front of the room. If he is using only one eye, put him where he can see most of the room with the good eye. After age 3, the teacher cannot force a child to use a lazy eye. You may even have to patch the bad eye.

The actual danger in giving a young child print is that we tend to make the exposure periods too long.

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MEASURING PROGRESS IN DEAF-BLIND CHILDREN

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Evaluation of the effectiveness of programming for deaf-blind children has been hampered by the lack of a simple, accurate, and quantifiable means of documenting developmental progress. Commonly employed methods of assessing behavior change such as behavior check-lists, video-taped activity protocols, and narrative reports are often inconvenient, difficult to interpret, impossible to quantify, or require expensive equipment not readily available to all programs. On the other hand, traditional tests for measuring functioning levels of handicapped children tend to be inappropriate since they do not take into account the profound combination of sensory, motor, integrative, communicative, and psychological disorders characteristic of many deaf-blind children. As a result, these standardized tests usually fail to discriminate between the more involved deaf-blind children or to accurately measure their developmental progress since these children almost invariably score at the minimum level on the scale.

Three years ago, the staff of the East San Gabriel Valley School for Multihandicapped Children located at that time in Azusa, California, designed a scale for the measurement of developmental progress among deaf-blind and multihandicapped children. This scale had the advantages of being concise, easy to administer, simple to score, and designed specifically for use with the severely impaired child. In addition, the scale which we have called the "Azusa Scale" was designed so that full use of the scale could be made without any specialized knowledge other than familiarity with the child to be rated.

The Azusa Scale, outlined in Fig. 1, is composed of five subscales: *Socialization*, *Daily Living Skills*, *Motor Development*, *Perceptual Abilities*, and *Language Development*. Each of these subscales are made up of four performance objectives. Each performance objective is, in turn, composed of seven temporally sequential steps describing specific behaviors observed among both normal and multihandicapped children as they progress toward achieving the particular performance objective. An example of one performance objective, "Responding to Adults, Children, and Objects" is shown in Fig. 2. Approximate normal ages for appearance of the behaviors described (Gesell) are also provided.

Instructions for administration of the scale specify that a level is considered attained when the behaviors described occur spontaneously and are integrated components of the child's behavior repertoire. A level is not considered attained if the behaviors occur only rarely or must be elicited by the teacher. In addition, so as not to credit splinter skills, all applicable lower level behaviors must have been successfully demonstrated before a child can be rated at a higher level. In administering the scale, greatest accuracy is obtained when several teachers familiar with the child rate on a consensus basis since one teacher may not have sufficient opportunity to observe the child in all performance objective areas.

The Azusa Scale has been used primarily by teachers to document developmental progress among individual deaf-blind children. Information gained from such evaluations provides the teachers with important feedback concerning the success of programming for the child.

Figures 3 and 4 show Azusa Scale profiles obtained at the beginning and end of the school year for two deaf-blind children. The ordinate shows the Azusa Scale levels and the abscissa, the performance objectives. Age equivalency scores with respect to normal development are entered next to each point on the profiles. The presence or absence of changes with regard to level and age equivalency score on each performance objective clearly shows the areas where developmental progress did and did not occur. For example, the child whose profile is shown in Fig. 3 exhibited distinct progress during the 8 month inter-test interval on all *Socialization* performance objectives. However, little progress was made in *Perceptual Abilities*. On the other hand, the profiles in Fig. 4 indicate that this child made marked progress in *Perceptual Abilities*, particularly in "Attending, Discriminating, and Responding to Auditory Stimuli" (4.2) and, in fact, showed considerable developmental progress in almost all areas.

These Azusa Scale results, in addition to documenting developmental progress, also provide a concise descriptive profile of the child. Such descriptive information can and has been provided to professionals and agencies unfamiliar with the child in lieu of the normally required standardized profiles or IQ scores.

The Azusa Scale can also be used to evaluate the effectiveness of specific educational and therapeutic techniques applied to individual children. This allows teachers to research their own methods to determine if their methods are resulting in developmental progress in the targeted areas.

In addition, since the levels on each performance objective are in the normal developmental sequence, the Azusa Scale can be used in program planning. Thus, the teacher can use behavior descriptions at each level both as reasonable developmental goals and as a guide to behaviors indicative of progress (or regression) on given performance objectives.

More recently, the Azusa Scale has been used in the evaluation of entire programs. These evaluations are based on scores obtained simply by calculating the mean age equivalency on a given performance objective for all children in the program. These mean scores can be used to describe and measure progress in programs in much the same way as individual scores describe and measure progress in specific children.

Figure 5 shows mean age equivalency scores for 21 children in the Callier Hearing and Speech Center Deaf-Blind Program. The pre-test was administered at the start of the school year in September and the post-test at the end of school in May. It can be seen that progress occurred in all areas and in general the progress was at least equal to the 8 month inter-test interval. Greatest progress occurred in *Language Development*, *Perceptual Abilities*, and *Motor Development*, while somewhat less progress took place in *Socialization*, and *Daily Living Skills*. These findings appear in many cases directly relatable to areas of emphasis within the program and to areas of specific expertise among the teaching staff. For example, the marked increase in *Motor Development,* a finding unique among the seven deaf-blind programs studied, may result from the presence of both a physical therapist and an occupational therapist working full time in the program. Likewise, the improvements in *Perceptual Abilities* and *Language Development* are likely due to the presence of a number of individuals either trained or particularly interested in these areas since they placed considerable emphasis on perceptual and language development. The extremely low scores in *Language Development,* objective 5.2, are an artifact of the test. The maximum attainable age equivalency on this performance objective is 12 months while for most other objectives, the maximum age equivalency score is 60 months.

Somewhat less emphasis was placed with the Callier Program on *Daily Living Skills* and this appears to be reflected in less progress in these areas. However the development of feeding skills (2.3), has traditionally been emphasized and this performance objective showed the greatest improvement among the *Daily Living Skills.* In fact, only within the Callier program was the mean age equivalency score in feeding (2.3) greater than in toileting (2.4).

The marked progress observed in the Callier Program is not characteristic of all programs designed to serve deaf-blind children. Pre- and post-test scores in Fig. 6 indicate that within this program, little or no progress occurred. In fact, in *Motor Development* and in most performance objectives of *Language Development,* the children were rated at a lower level in May than they had been the previous September. This demonstrates that the mere presence of a deaf-blind program does not assure that developmental progress among the children served will automatically follow.

Fig. 7 shows pre- and post-test mean age equivalency scores which typify results from some of the other deaf-blind programs surveyed. In these programs, marked progress was made in some performance objectives, but little or none in others. Azusa Scale results of this type should indicate to the program staff possible areas for teacher training, areas where the techniques currently employed are apparently ineffectual, areas where a particular aspect of development has been neglected, and finally, areas where the techniques employed have been particularly successful. Often because of the close contact with the children on a day to day basis, imbalances in programming go unnoticed. However, these imbalances become distinctly evident when one examines progress for the year across all children in the program.

Azusa Scale results also provide insights into the long-term effectiveness of intensive educational and therapeutic programming for deaf-blind children. Fig. 8 shows Azusa Scale data obtained from 13 children in the Callier Deaf-Blind Program over the past two years. Each symbol represents the mean age equivalency score across the four performance objectives in each subscale. Two points will be made at this time from these data. First, during the summer recess (between 5/72 and 9/72), progress continued to be made in *Language Development* and *Daily Living Skills,* but no progress occurred in *Socialization* and a distinct regression took place in *Motor Development* and *Perceptual Abilities.* In *Perceptual Abilities,* in fact, the drop in mean age equivalency scores was so great that over the following school year, the children were barely able to exceed the developmental level they had reached the previous May. While there are a number of possible interpretations for the differential effects of the summer recess across the five subscale areas, it will suffice at this time to point out the obvious. In some areas of development, the absence of formal programming for an extended period of time, in this case three months, can have a detrimental effect on progress in deaf-blind children.

The second point to be made is that marked progress occurred in both the first and second school years and that the rate of progress was about the same both years. This demonstrates the success of the Callier Program in bringing about developmental progress in deaf-blind children and suggests that continued rapid improvement in developmental level among these children is to be expected.

In summary, the Azusa Scale appears to be a valuable device for measuring developmental progress particularly among severely impaired deaf-blind children. The scale can be used to describe, measure progress, and document the effectiveness of educational and therapeutic techniques both with respect to individual children and entire programs. Data obtained from the Azusa Scale can also reveal strengths and weaknesses of programs as they affect the development of the children. Azusa scale results thus have direct and immediate applicability to the upgrading of services to deaf-blind children.

FIGURE 1

SOCIALIZATION

1.1 Developing Self-Identification
1.2 Responding to adults, children, and objects
1.3 Interacting with others
1.4 Cooperating with others

DAILY LIVING SKILLS

2.1 Undressing and Dressing
2.2 Washing hands and face
2.3 Eating solid and liquid foods, using utensils and drinking cups
2.4 Toileting

MOTOR DEVELOPMENT

3.1 Performing gross body movements in place
3.2 Performing fine, manipulative movements
3.3 Performing locomotor activities
3.4 Moving in space and sensing spatial relationships

PERCEPTUAL ABILITIES

4.1 Recognizing, accepting and initiating Tactile stimuli
4.2 Attending, discriminating and responding to Auditory stimuli
4.3 Attending, discriminating and responding to Visual stimuli
4.4 Identifying and discriminating between Odors, and between food Tastes

LANGUAGE DEVELOPMENT

5.1 Developing memory and functions of inner language
5.2 Developing perception and functions of receptive language
5.3 Developing functional communication in expressive language
5.4 Developing conceptualization through communication

FIGURE 2.—*1.2 Responding to adults, children, and objects*

Performance requirements	*Profile score*
Does not react to others or objects; e.g., neither forward movement nor withdrawal is evident (0 to 4 weeks)	0
Permits adults to manipulate him through activities. Reacts to adult by making a sound, reaching out, looking at, and/or changing facial expression (4 months)	1
Differentiates between people and objects. Touches, feels objects and explores environment and/or seeks something to play with (7 months)	2
Differentiates between familiar and unfamiliar adults. Permits hand to be held and moves with familiar adult. Allows others to be a part of his environment. Participates in parallel play (2 years)	3
Permits adult to place his hand into the hand of another child, and to be held in this clasp while they move about the room (3 years)	4
Responds to another child. Releases, and/or exchanges toys; shares and/or takes turns, with adult assistance (4 years)	5
Participates in social activities—marching, dancing, group singing, games and rhythmic activities (5 to 6 years)	6

FIGURE 3

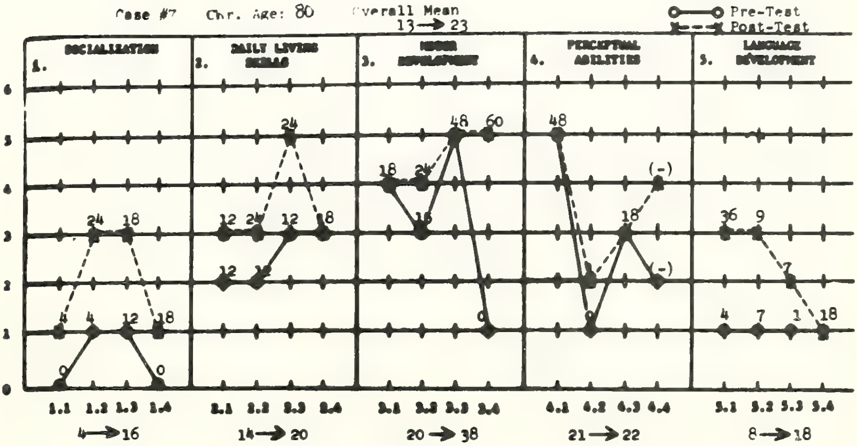


FIGURE 4

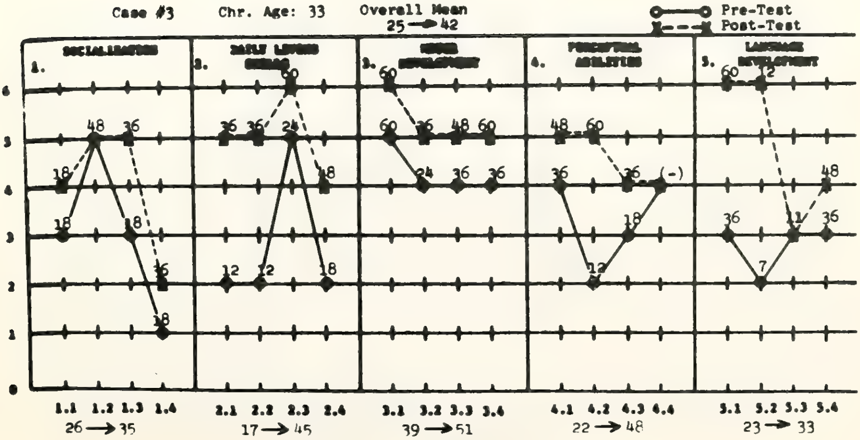


FIGURE 5

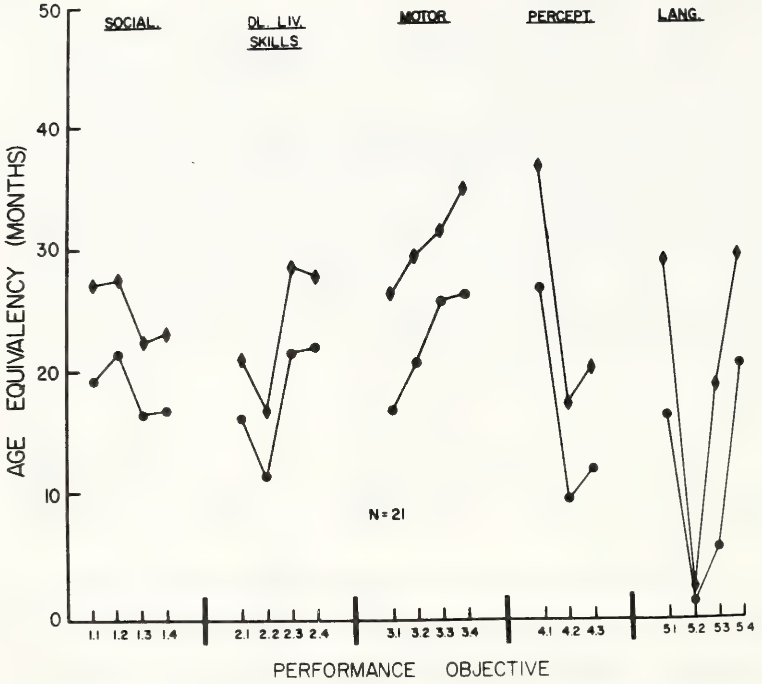


FIGURE 6

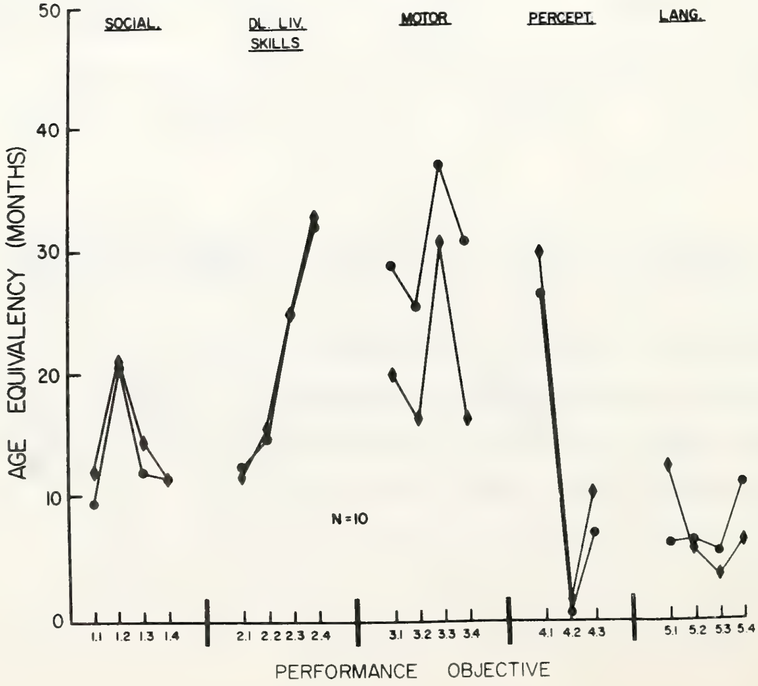


FIGURE 7

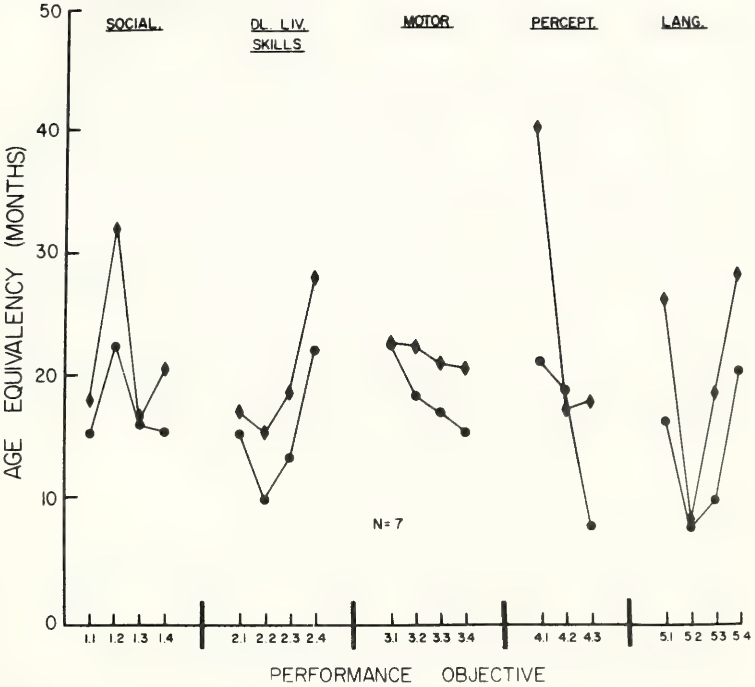
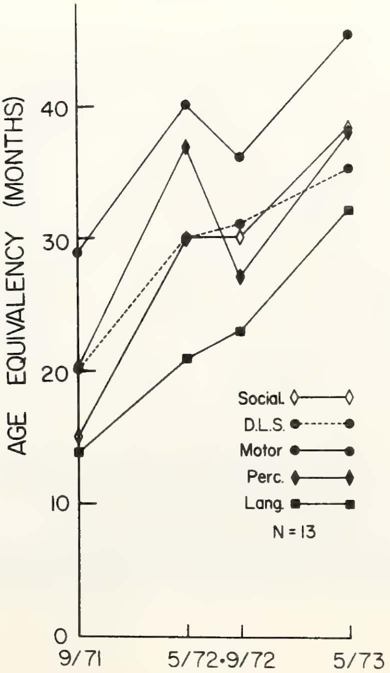


FIGURE 8



SOME CONCEPTS OF POSITIVE MENTAL HEALTH FOR TEACHERS IN SECONDARY SCHOOLS FOR THE DEAF: OR, LIFE WITH MEANING

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The remarks to follow are intended for teachers of the deaf at the high school level, although they may have some meaning for teachers everywhere and for students in the sense that the well-being of teachers is a vital influence on the mental health of their students.

Teachers of deaf youths, like everyone else, are faced with coping not only with the challenges of their profession but also with the complex problems of our times. As with other men in other times, we seek to both understand our world and to deal with it in a constructive fashion. It is when we cannot understand our problems, or cannot resolve them, that our frustrations and unhappiness increase. Perhaps it will be helpful to us then, to consider the problems that we face today within our profession and in the world at large.

Problems of Our Times

We live in a world that can send men hundreds of thousands of miles into the mysteries of outer space and bring them safely home again with pinpoint accuracy. Paradoxically, we also live in a world that virtually ignores the vital problems of child raising and mental health, discrimination against minority groups, and sickness and poverty. In America itself, the wealthiest nation in history, we continue to ignore the fact that at this time one person out of every ten will spend some part of his life in a mental institution, and untold thousands of children will suffer the unhappy consequences of unwanted birth, parental strife, and poverty.

We in America are being made increasingly aware of the social problems that exist. Mass communication media constantly bombard us with the problems of pollution, increasing urbanization, poverty, sickness, warfare, and decreasing resources. The steadying influence of religion and family values is being slowly dissipated. The use of alcohol and drugs is mounting in alarming proportions. The security of cohesive families is being shaken by increasing divorce rates and changing family roles. There is widespread disillusionment with government, spiraling costs concomitant with decreasing monetary values, increasing crime, and the subtle but pervasive influence of advertising media which is conditioning us to want more and more. These events, while certainly present in some form from time immemorial, are particularly disruptive today because of their rapidity and intensity. Changes are occurring so rapidly that yesterday's traditions become "old fashioned" today; today's truth becomes tomorrow's fable. Without the stable foundation of enduring values and unchanging human commitments, we are tossed and torn between transient forces. Therein lies our loss of equilibrium and security, for man needs a stable base as a haven in the storm of change.

This is not to say that man is incapable of absorbing change, for man is adaptable and inherently forward-moving. Rather, much of the storm in our world is like the evil apparition of Macbeth, conjured up not by a guilty conscience but by Madison-Avenue hard-sell tactics and some of our leaders who may be motivated by power or monetary gain. A look around us reveals a peculiar phenomenon of our times, where change for its own sake is idolized, and "bigness" is equated with "better". A further disquietening note is to be found among those in our society who, not liking the way things are, take it upon themselves to force change without considering the infringements they are making upon the rights of others.

These circumstances can but have a disruptive, harmful effect upon each one of us. To the extent that we fail to recognize this fact, and act to remove such destructive forces, we are contributing to our own frustrations and unhappiness. What is even worse, however, is that the world we are building is the one our children will inherit.

Problems of Our Profession

As we consider the disturbing elements within our own profession let us first look at education in general. While there is much we can be proud of, we see such problems as dying schools within the inner cities, staggering tax loads for citizens, inadequate salaries, large classes, double social standards for teachers, and unrealistic parental expectations of schools. Our rapidly expanding knowledge forces a heavier load on teacher and student alike, resulting in increased pressures on both. We are faced with cramming new knowledge into an already-bulging curriculum or discarding old knowledge in favor of new. We give special emphasis to preparing the college-bound and provide a watered-down curriculum to other students. Whereas education was once preparation for life, the specter is raised that education is now largely irrelevant to a generation of children that faces a world that has changed rapidly in a short time.

What is the teacher to do but hang on grimly in the face of these terrific forces?

We cannot leave the subject of problems of our profession without taking a look at a comparatively new innovation designed to foster accountability. Specifically, I am referring to teaching by objectives and evaluating outcomes. This innovation developed in an effort to eliminate ineffective teaching practices, and as such it is to be commended. However, there is a danger in that the concept can be carried too far and, I suspect, it *is* being carried further than it was intended. I have been amazed at some of the curriculum guides I have seen, where every action of the teacher was expected to be outcome-oriented. This imposes a terrific burden upon the teacher, but even more importantly it poses a potential threat to originality and creativity. Learning is an individual, spontaneous process, and, even though teaching by objectives is an effort to improve education, grave doubt is raised when we see the extremes to which it is sometimes being taken. As we consider this matter, may we wonder what Socrates would have had to say about it?

To come to the education of deaf children and youths, there are several problems that undoubtedly occasion significant frustration for teachers. The first and foremost of these problems must be that of how to communicate with deaf people. We hear arguments on all sides about which method is best, with heated denunciations exchanged at conferences and on the pages of learned journals. How confusing and unsettling this must be to parents and teachers alike, not to mention to the children themselves! Certainly there is room for a variety of methods in the education of the deaf, as in the education of all children, and when there is dogma of any kind there is also to be found frustration and unhappiness. John Dewey long ago espoused a pragmatic approach to education which we in the education of the deaf might do well to reexamine when we become too rigid about our personal beliefs concerning the ideal method of communicating with deaf people.

Another problem in our profession that is causing considerable frustration is that of widespread criticism of schools for deaf children. We hear this criticism both from within and from without, and, as in all kinds of professional endeavor, some of this criticism is justified. From a mental health standpoint, however, constant criticism can be a destructive thing, and for this reason those of us who may be leaders in the field should make a stronger effort to help improve our teaching approaches so that there is less cause for criticism. The education of deaf children is one of the most difficult of all helping professions, and when criticism is heaped upon criticism it can be expected that the teacher will become demoralized.

A third problem in our field is that we have not begun to meet the needs of deaf children who are handicapped further by poor communication skills, behavoir problems, multiple disabilities, and other limitations. Ironically, such children may comprise as much as 50% of the student enrollment at most schools for the deaf. Our failure to take major action to help these children is one of the justifiable criticisms that we must face. Because some teachers may not know how to work well with children, or may not have the resources they need, they may face intense frustration and guilt occasioned by their failure to be of greater help.

A fourth problem that stands out is that of the frequently encountered emphasis upon college-bound deaf students. Certainly such students should be given strong programs, but what of the students who do not have the ability to succeed in college or who do not desire to attend? This situation may cause difficulties for the teacher who may feel that his work is a failure unless his students can make it to college.

Another problem, which I consider to be quite important, is that of irrelevancy in some curricula for deaf high school students. How many deaf high school students do you know who are turned off to high school, who evidence no interest in what is happening in the classroom? If your experience parallels mine, then you have seen quite a few. Such students have no interest in doing classroom work, but would rather be in shop or on the athletic field. This poses a problem for the teacher who must encourage these students and yet may feel that perhaps it is his fault that they are disinterested in school.

A sixth problem centers around dormitory living. Frequently high school-age students find themselves with very little to do during the evenings, and because of the demands of group living it is difficult for them to find outlets for their boundless energies. This poses a problem for the dormitory counselor in that disciplinary problems increase when there are not enough creative activities for the students. The unrest thus created spills over into the classroom.

Finally, there is the problem that appears to be a mark of our times—the seemingly endless effort at innovation. Do not misunderstand me on this point. There is a definite need for meaningful activities for high school-age students in all schools—both day and residential—but frequently many innovations seem to be designed just to be doing something new, rather than to achieve relevance. I have in mind such activities as workshop after workshop for teachers, endless efforts at increasing the use of so-called media into the classroom, and the crash programs to introduce total communication to schools. It would seem reasonable to say that workshops for teachers, the use of instructional media, and total communication are all valuable and worthy activities, but, when viewed from a distance, these may all be viewed as just single aspects of the total education effort. Yet, each one is seen as critical, with the fate of education of the deaf hinging upon them. The intensity of these activities, more than anything else, is the disturbing element of this picture. It is as if we are trying to atone for past failures by grasping onto a promising innovation and holding on for dear life.

Directions for the Future

More than anything else, teachers of deaf students need to reexamine their basic values and act to bring more meaning into their own lives as well as the lives of their students. We need to cease being swayed by what may aptly be called "values of the day", as some supermarkets are wont to advertise their bargain buys, and return to enduring values that have withstood the test of time.

The first value worthy of our consideration is that of the worth and dignity of each individual. In our haste to accomplish our educational objectives we may unwittingly be sacrificing the self-esteem and independence of the student. To aviod this, we must make the student the focus of our efforts, and plan our professional activities to meet the student's needs. In order to accomplish the goal of meeting the student's needs we need to become more sensitive, more aware of the student's abilities and interests as well as the kind of world that he is preparing for. To the extent we understand where the student is going, we can be better prepared to help him get there.

The second value we could benefit from is that of commitment to human needs. Too often we become curriculum-centered and place undue emphasis on what we are teaching as well as how we are teaching it. In the process, we overlook the emotional and, yes, the spiritual needs of deaf students. As our schools become more "professional", we as teachers may be becoming so "efficient and objective" that we may overlook the unique individual in front of us. We must avoid this and place our primary emphasis upon helping our students to become persons who can appreciate other people and their uniqueness.

A third desirable value is that of being more relevant. While it is important for the student to learn reading, writing, and arithmetic, it remains as true as ever that he must first of all learn how to live. This means involvement with life, not only in the school but within his family and his community. Our field has yet to help families to understand and communicate with their deaf child as they would with a hearing child. Time and again I encounter young deaf men and women and their parents, and the lack of common understanding and communication is appalling. The same is true of the deaf youth and the community. Yet, can we expect any more as long as we virtually segregate the deaf student from his family and his community? I think not. If we can but plan ways to foster better family and community understanding of and interaction with the deaf individual, we will be making a major contribution to helping deaf persons. There can be no greater relevance than helping the deaf person to become a part of his world. Conversely, there can be no greater irrelevancy than making the deaf person a stranger in a strange land.

A fourth value which we might do well to adopt is that of spontaniety and creativity. We must avoid locking ourselves into objectives and procedures that are so rigid that there is no room for creative activities that may arise spontaneously. Human interaction is a dynamic phenomenon that often proves most creative when it is natural and unplanned. We cannot do away with objectives completely, of course, but I would hope that we as teachers can trust ourselves enough to be what we are and not what our list of objectives propels us to be. Being spontaneous and natural means being ourselves, and it is when we are ourselves that we can be most effective.

Finally, I think each one of us should arrive at an understanding with ourselves as to what we are, what we believe, and what we want to do. More than anything else we need a commitment to our world and the people in it. We truly live in a time of confusion and change, and unless each one of us strives to achieve what we believe in we leave ourselves as well as others open to the unending exhortations of the Madison Avenue set and the Watergate mentality. As we fight to restore our world to stability, integrity, and humaneness, we will find ourselves more confident, more worthy of being the models that deaf children need.

In closing, I am reminded of these words of G. K. Chesterton:

> I do not believe in a fate that falls on men however they act; but I do believe in a fate that falls on them unless they act.

MAINTAINING AND BUILDING UPON THE BASIC FOUNDATIONS OF SPEECH

Marcia Faier Tash,

Central Institute for the Deaf, St. Louis, Missouri

By the time children reach the Upper Primary Level at Central Institute, all speech sounds have been developed and basic habits of voice production have been established. These children need continued maintenance of skills previously learned and remedial work as necessary. With a good foundation at the Lower and Middle Primary Levels, the Upper Primary children should be able to concentrate on learning how to use speech more effectively in various situations, to use their voices to express emotion and convey meaning, and to use the characteristic intonation patterns of English in their everyday speech.

This paper and forthcoming demonstration will illustrate how we as teachers can maintain the initial teaching and advance the children to a higher level of speech intelligibility.

The components of intelligibile speech are articulation, voice quality , rhythm, and intonation. Rhythm and intonation work together to produce speech patterns and both are highly related to stress as we shall see later.

Let us discuss these components one at a time. We are assuming that articulation of all or most phonemes has been mastered at the Pre-Primary and Lower Primary Levels. In Upper Primary, in order to maintain those previously taught phonemes, we use syllable drills. It is one thing to be able to say a sound but quite another to use it in everyday speech. It is at this time that we over-teach. Once the children can give a sound, we give them quantities of drill to make the sound habitual. Today I am going to show you the use of a cross-drill designed to maintain "n". "N" was chosen because this is an element that the children can produce but often omit in their spontaneous speech. The primary and secondary spellings from the Northampton Speech Charts are included in the drill. Learning these spellings helps the children to sound out syllables as they meet them in words. As the children become older and more advanced in their education, they are able to use those previously mentioned skills and go on to learn pronunciation rules.

Maintenance Drill on "n"

nah/	nah	nah
naw/	naw	naw
n$\overset{1}{\text{oo}}$/	n$\overset{1}{\text{oo}}$	n$\overset{1}{\text{oo}}$
nee/	n$\overset{1}{\text{ea}}$	nee
nur/	ner	nur

The children have been given a specific stress pattern to follow. Here, too, they have practice with main-stress.

"n" in all positions

night	penny	moon
no	honey	man
name	funny	sun

"n" in sentences

I found a penny.
It's a sunny day.
I saw the man in_the moon.

When it comes to voice quality, we all know that good voice is that which is unstrained for the speaker, and pleasant to the listener. We know that to have good voices the tongue must be forward and the children must be relaxed. In order to keep the children relaxed, speech should be a happy time for the children. They need constant encouragement and need to know that you and they are working together for just one thing--to help them! Every morning at Central Institute, we have a voice tune-up.

m________________

mumumum__________

n________________

nununun__________

See what your children do when they say, "my mother" and "a banana". If they do not say those nasal consonants, use the above exercise with them.

But, of course, pleasant voices and precise articulation are not enough. The children must learn to use the characteristic rhythms and inflections of the English language. English is a stress-timed language. This means that in English the stressed syllables come at fairly regular intervals, and any unstressed syllables are crowded in between so that the beat is not broken. Contrast this with Spanish. In a syllable-timed language such as Spanish, every syllable receives equal value. Most deaf children use syllable-timed rhythm instead of stress-timed rhythm. This is an example of what is meant by stress-timed rhythm.

I wańt moré milḱ.

I wańt some moré of that milḱ.

The rhythm remains the same and the same words receive the stress no matter what the length of the sentence. Because both sentences have three stressed syllables, they take the the same amount of time even though the second is longer. In the second one, all of the unimportant words must be squeezed together in order to maintain the rhythm.

In order to use stress-timed rhythm, children must learn how to achieve stress by a combination of duration (prolonging the vowel in the stressed word), pitch change (raising or occasionally lowering their voices on the stressed syllable), and to some extent loudness. They must also learn to devalue unstressed syllables and give them lightly, so that they keep the basic rhythm pattern.

The following is an exercise on stress-timed rhythm. This helps the children learn to devalue unstressed syllables in order to keep the basic rhythm pattern.

b$\overset{1}{\text{oo}}$/ b$\overset{1}{\text{oo}}$/ b$\overset{1}{\text{oo}}$/ b$\overset{1}{\text{oo}}$/
big/ dog/ big/ dog/

bu b$\overset{1}{\text{oo}}$/ b$\overset{1}{\text{oo}}$/ bu b$\overset{1}{\text{oo}}$/ b$\overset{1}{\text{oo}}$/
a big/ dog/ a big/ dog/

bu bu bu b$\overset{1}{\text{oo}}$/ b$\overset{1}{\text{oo}}$/ bu bu bu b$\overset{1}{\text{oo}}$/ b$\overset{1}{\text{oo}}$/
I have a big/ dog/. I have a big/ dog/.

In addition, the children must join words together smoothly. We teach the following symbols:

a) slurs------in⁀a boat

The mark "⁀" shows that we usually (but not always, it depends upon the meaning) join together a word ending with a consonant when it precedes a word beginning with a vowel.

b) phrasing------The boy is⁀in⁀a boat.

c) stops------Stop| that!

The stop mark " | " tells the children to stop the flow of breath after a plosive. This helps break the habit of inserting the superfluous vowel "u" after the plosive and makes for a smooth transition to the next word. This mark is used after "p and b", "t and d", and "k and g".

As for inflection, it is a case of teaching the children to use the intonation patterns that are characteristic of the English language, and also of teaching them to use their voices to convey emotion or intent. The linguists tell us that we need only four relative pitch levels to produce the basic intonation patterns characteristic of English, and these we find almost every deaf child can learn to give. At Central Institute, we number them like this.

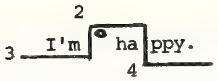
1 being very high. It is usually used to show surpirse or other strong emotion.

2 slightly higher than 3. It is used for normally stressed syllables and for the raised voice.

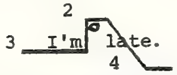
3 being the most natural voice. It is used for running speech.

4 being low. It is chiefly used at the ends of utterances to show finality.

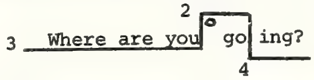
We also use a system of transcribing intonation patterns applied to connected speech, which we borrowed from a linguist by the name of Kenneth Pike. The following are examples of the markings that the children have learned to use. Notice that it is on the stressed syllable that inflection becomes significant. These specific patterns seem to be typical of all speakers of the language. We all tend to drop our voices at the ends of sentences and utterances to show finality. These markings serve as a visual clue for the children and and are not used for everything that the children say.



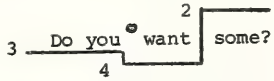
Here we have a discrete drop in pitch.



On one syllable words we must use a glide instead of the step.



This is a regular question, and we have a discrete drop in pitch.



This is a question requiring a "yes or no" answer, therefore, the voice usually goes up at the end.

I do not have time to go into Pike's work in detail, but if you are interested in learning more, you may want to read his monograph, The Intonation of American English. Miss Helen Woodward of Central Institute has also written an article entitled Intonation and the Teaching of Speech. Miss Woodward's paper summarizes Pike's work and applies it to the teaching of speech to the deaf.

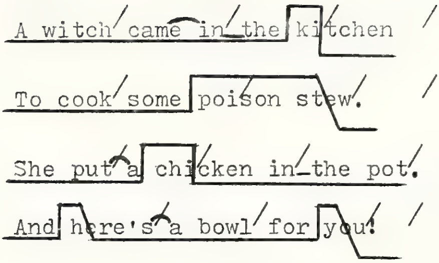
Our children very quickly learn these intonation markings just as they learn to respond to the letters that represent the vowel and consonant sounds. Any of us can say any utterance any way we please, and the same utterance given with different intonation conveys different meanings. For example, the White House does not mean the same as the white house. The fact is, however, that there is a rather typical neutral way of producing most English structures, and these we teach the children right along with the structure itself. For example, a prepositional phrase has a definite pattern (in the house). The main stress usually comes on the object of the preposition and in so doing, the voice automatically is inflected. When enough examples are given, the children learn to do this instinctively. Noun-verb has an appropriate pattern (Beth cried.). The present progressive tense has a typical pattern (David is swimming.); and so on. The children are going to read some questions which demonstrate the intonation associated with common question patterns.

What is your name?

How are you?

Besides teaching children to apply intonation appropriately to various language patterns, we also teach them to use their voices to express special meanings or intent. For example, if a child were asked to make a choice between wanting a piece of candy, a piece of gum, or some popcorn, he must learn to bring out the key word in his answer.

In a poem entitled *The Witch*, the children will demonstrate how they have learned to use their voices to express both emotion and intent and also to follow the intonation markings.



A witch came in the kitchen
To cook some poison stew.
She put a chicken in the pot.
And here's a bowl for you!

With this teaching program, the children gradually develop independence and realize that they must internally do something to correct themselves when a person says to them, "What did you say?". Our goal is to give the children the skills to self-monitor and self-correct. The teacher's job has not been completed once the children have been given these tools. The children must now use these skills, and it is the responsibility of us as teachers to make sure that the children maintain all that has been taught.

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REDUCTION OF STANDING UP BEHAVIOR THROUGH TOKEN REINFORCEMENT

Martha Tims, teacher, Kansas School for the Deaf, Olathe

INTRODUCTION

In order to be most effective in teaching hearing impaired children, it is necessary that a non-disruptive classroom environment exist. Because of the handicap, speechreading (lip reading) is of utmost importance in educating a deaf child. Good speechreading conditions exist in a quiet and pleasant classroom, that is free from noise and distractions. When children stand up frequently without permission, it interrupts concentration and creates disruptive conditions.

Token systems have been frequently used to develop and maintain appropriate or useful behavior (Weimer and Freeman, 1971; Hall, Broden, Dunlap, and Clark, 1970). Token reinforcers are often used in special education classes and with others who do not respond to praise, teacher attention, and other common reinforcers (Hall, 1969; Montgomery, 1971).

The purpose of this study was to reduce the standing up behavior of the students in a hearing impaired classroom by the use of systematic reinforcement through a token system. It was conducted by a student enrolled in a behavior management course in fulfillment of a partial requirement for the class.

SUBJECT AND SETTING

The subjects were eight hearing impaired students enrolled in a primary class at the Kansas State School for the Deaf in Olathe, Kansas. The subjects consisted of 3 boys and 5 girls, 7 or 8 years old, who are in their second year of school.

The experiment was carried out in a self-contained classroom, academically functioning on a Prep II level. The students were generally seated on chairs in a semicircular arrangement facing the teacher.

MEASUREMENT PROCEDURES

In order to determine the operant level of behavior the following definition was used for all recording: Standing up is defined as raising yourself off the seat of the chair (8″ or more), straightening the legs, and shifting body weight to the feet.

Thirty minute daily observation sessions were made by the classroom teacher while she was sitting facing the children who were sitting in a semicircular arrangement. Recordings of behavior were calculated on a grocery counter by the teacher. Persons making reliability checks used a paper and pencil tally.

Reliability checks were made during the 7th, 9th, 14th, and 20th sessions. Reliability checks were taken by a teacher aide and a student teacher. Reliability checks ranged from 80 to 100% with a mean of 97.0%.

EXPERIMENTAL PROCEDURES AND RESULTS

Baseline$_1$

A baseline of the operant level of behavior was obtained through the first ten sessions. The baseline remained stable. Thirty minute observations were made daily during morning "greeting" and the morning "news." These observations were made from 8:45 to 9:15. The subjects were involved in a group activity throughout the observation period. The mean number of stand ups during this time was 24.7 per session.

Token Reinforcement

Beginning the 11TH session, pictures of happy faces were put on the wall. There was a happy face for each student. Seven round tokens made the smile on the happy face. The students were told that if they stood up without being called on by the teacher, a token would be taken off their happy face. The students were told that if they had five tokens remaining by the end of the school day, they could have their choice of a coke, an ice cream bar, or a box of colors. Five of the eight students had five tokens by the end of the day. They were reinforced. The same procedure was continued in the 12TH session. On the day of the 13TH session, the children were told that they would be reinforced on the day of the 15TH session. Experimental 1 phase was carried out for 5 sessions. The mean number of stand ups during this phase was 5.8 per session.

Baseline$_2$

Beginning the 16TH session, the happy faces were removed, and the subjects were no longer reinforced for non-standing up behavior. This phase was carried out for seven sessions. During this time standing up behavior was ignored. The mean number of stand ups was 10.0 per session.

Token Reinforcement$_2$

On the 23RD session, the happy faces were again put on the wall. Reinforcement was continued under the same experimental conditions. Standing up behavior was reduced to low rates, and remained as such throughout a period of 10 sessions.

Token reinforcement was discontinued after the 33RD session. The teacher continued to praise the children for non-standing up behavior.

Post Checks

Post checks were made by the experimenter during the 36TH, 38TH, and 40TH sessions. Standing up behavior continued to remain at low rates.

Discussion

The results of this study show that token reinforcement has been effective in the reduction of an unacceptable classroom behavior, standing up without permission. Previous to baseline, the teacher tried unsuccessfully to decrease this behavior through negative verbalizations.

When experimental procedures were initiated, the subjects became very cautious about standing up. They would raise their hand or verbally seek permission from the teacher before standing up. When they were called on to participate in a class activity, many of them would not get out of their chair until they had made certain that it was okay with the teacher. A certain amount of tattling began with this phase. If one child forgot and stood up, another child would tattle on him. Another experimental project was begun. In this project, non-tattling behavior was reinforced.

The subjects of this study have now reached a level of behavior that is acceptable by the teacher.

Due not only to the simplicity of this project, but also because of its tremendous value in managing a classroom, I recommend that all teachers begin educating themselves to some of the techniques and principles of behavior modification. It can become a beneficial tool in any classroom.

The rest of our presentation will be a slide commentary of practical classroom application.

It is well to remember that behavior modification is amoral. These techniques are extremely powerful; therefore, a great responsibility is placed on those who implement them. Educational goals should be moral and ethical. Anyone who uses behavior modification principles must remember that behavior is changed by the scientific application of consequences; not just randomly handing out chips, candy, or stars. The challenge for us as teachers is to provide proper learning environments.

This presentation is a combination of narrative, slides, and transparencies.

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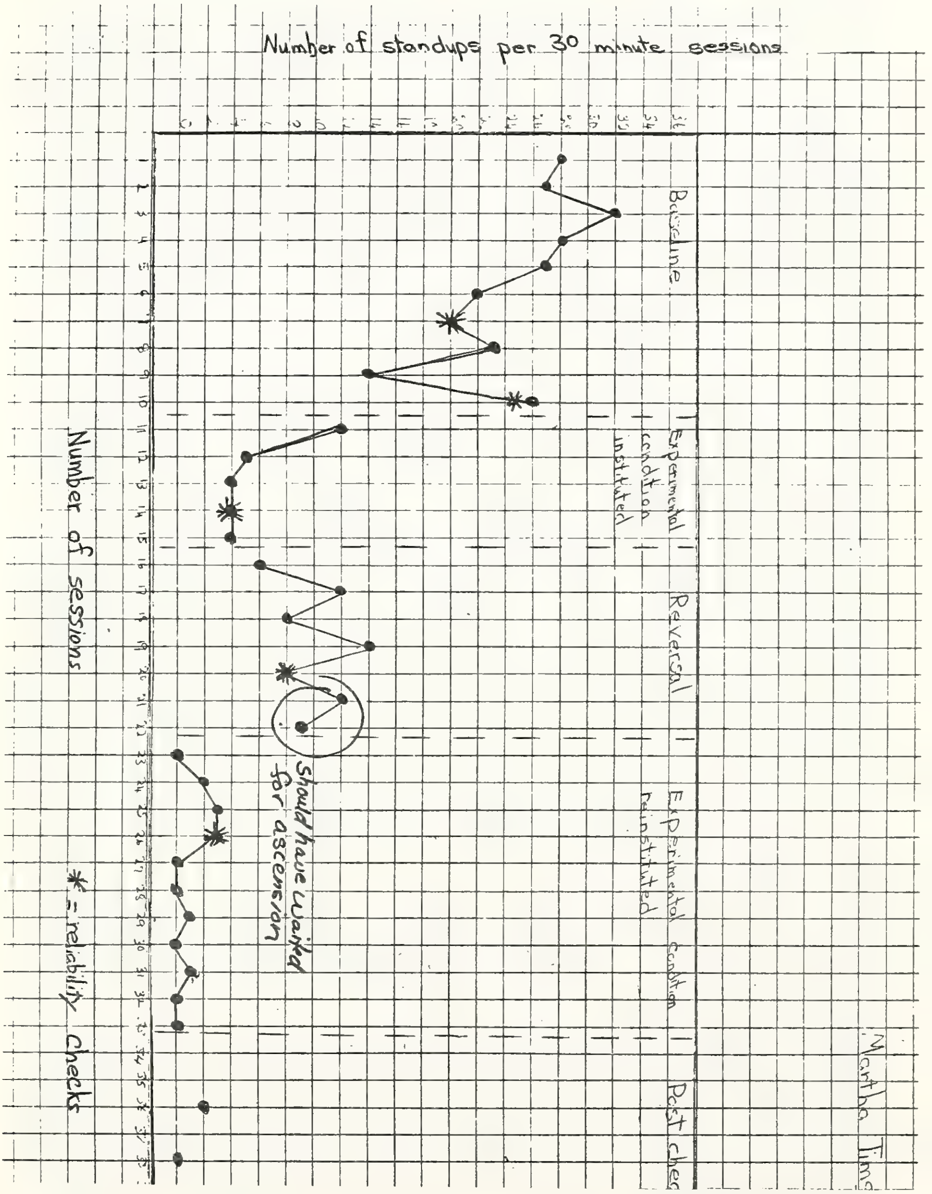
Number of standups per 30 minute sessions
Baseline
Experimental condition instituted
Reversal
Experimental condition reinstituted
Post chec
Martha Tim
Should have waited for ascension
Number of sessions
* = reliability checks

MEETING SOCIAL NEEDS OF THE DEAF CHILD IN THE RESIDENTIAL SCHOOL

Olaf Tollefson, Dean, Oregon School for the Deaf, Salem

The residential school is not a home. It is a school. "Living in" was found to be necessary in the past because of difficulty of travel. "Living in" adds to the responsibilities of the school. In addition to providing teachers and an educational program the school has to provide lodging, food, out of classroom supervision, food preparation personnel, medical personnel, plant and grounds maintenance personnel. The school also has to plan for social activities, moral and character building activities, guidance—it becomes a truly formidable task.

Let us go back to the opening sentences of this paper. "The residential school for the deaf is not a home. It is a school. "Living in" was found necessary in the past largely because of travel considerations." The school was set up and children from all over the state came to that place. It was the best that could be done under the conditions. Do those conditions hold true today? Is it still necessary for the deaf child to grow up in school and think of home as a place to go for vacations? In Oregon we do not think so.

Several years ago we set up a new arrangement. All local children attending the school became day students. Arrangements were made for busses to go out each morning to pick up students and to take them home when school was out in the afternoon. Those living within 85 miles or a 2 hour bus ride from the school were required to go home every week-end. Parents of students living beyond these areas are encouraged to have their children home for a week-end at least once a month. The result has been that we average less than 30 students staying at school over the weekend. And this is out of an enrollment of approximately 270 students. Some 60 are day students, living at home every night. Of the remainder, the larger part are at home at least during the weekends.

We feel that this is an important social need of the deaf child that the school cannot provide. The deaf child needs to be a part of his home, his family, his neighborhood. He needs the warmth, security, and belonging that are a part of the home. A school can only be a short time substitute.

Of the children who remain on the school grounds over the weekend, school busses are again put into use. The dormitory personnel plan outings such as a family would probably make—a picnic, a trip to the coast, a trip to the zoo, an outing to one of the many state parks in the vicinity, movies, rollerskating, a hike, flying kites—it is a substitute for being at home but it does provide an opportunity to get away from school and be in the society of hearing people and doing as they do.

Parents are encouraged to communicate with their deaf children and with these children at home more often there has been more opportunity and a greater need for doing so. The overall result has been a very positive one. An especially good result has been that children have been taking their problems home and discussing them with their parents. This has led to greater interest of parents in the school. It has led to some warm situations in which the school had to get down to the nitty gritty to justify or change policies. Yet, the net result has been beneficial all around. The home is no longer a missing element in the social development of the deaf child in our school. There may be much more to be desired in this area but we feel that a beginning has been made.

The residential school too often lends itself to regimentation. Everyone eats, goes to bed, goes to school, does chores, goes out to play, goes swimming, etc., at the same time and at the same place. People are in charge to see that everyone is there and no one is making a nuisance of himself. Washing, bathing, shining shoes, making beds, brushing teeth—each has its niche in the order of the day. In short, the student's entire day is planned for him, to follow whether he likes it or not. Few, if any positive decisions are left to the child. We feel that social maturity involves a great deal of decision making. Making a wrong decision is not necessarily a catastrophe, it can be a learning situation. This is especially true where leisure time is concerned. Greatest satisfaction comes from doing the things one enjoys and wants to do in a manner that is socially acceptable at the time.

We have been working on this theory on many fronts. The most recent is a set up for free play periods in the pre-school and primary. We sub-divided the play areas into different sections and placed a dormitory counselor in each. For the primary children there was a basement play area, an outdoor play area with swings and other playground equipment, a recreational room with a TV set and games, an area for riding bicycles and tricycles, a stretch of lawn with a hill to run or roll down—these can be changed or modified as the need arises and something to play with is provided in each area. The small children are allowed to decide where they want to go to play and go there. If they grow tired of that area and want to go to another, permission is given and the child takes off to new adventure. The child has the opportunity ts decide and do what he enjoys doing the most. There will be need for both encouragement and some restraint but we have brought in the element of Johnny asking mom if he can go over to Jim's place and play in his back yard.

With the older children we try to graduate the controls all the way from close supervision to what is very close to no supervision. We have different dormitory levels based largely on age plus behavior (which I prefer to call maturity level). Each level has less restrictions than the previous or lower level. Consistent poor behavior may result in moving down and loss of privileges. Responsible behavior leads to upward movement and increased privileges. The top level is what we call the upper group. This upper group is composed of these high school students who it is felt are sufficiently mature to be on their own to a large extent. No one wakes them up in the morning; no one tells them that it is time to go to school, to breakfast, dinner, or lunch; no one tells them to take a bath or make their beds; they do not have to line up for any or all activities; they may leave the campus to go to nearby stores or hamburger stands; they can plan parties and excursions (properly chaperoned); they do not continually have to ask permission and are not continually being checked upon. Each one carries a card that states he or she is a member of the upper group. When a counselor, teacher, or other staff member sees a member of this group acting in an irresponsible or questionable manner he asks the student for his card, writes down the offense, and hands both into the Counselor III who is in charge of the group. The Counselor III then calls in the student and the incident is discussed. Continued or drastic misbehavior results in loss of upper group status. A month must pass before he can be considered for readmission. To be admitted or readmitted to the upper group he has to have a sheet signed by all his teachers, counselors, and the administration saying it is felt he should be allowed to be a member of this group. The privilege of being a member of the upper group has been a very strong incentive for mature and responsible behavior and we feel it is an important part of our effort to meet the social needs of our students.

Upon leaving school and entering the world of work, our students are going to find it necessary to provide for their own food and lodging. As often as not, it will be an apartment in which they can do their own cooking. Most likely they will be sharing expenses with a friend. This is a need that we feel we should be preparing them to meet. To do so, we have set up apartments in both the girls' dormitory and the boys' dormitory which are similar to those they will probably be renting. They consist of a bedroom, bath, and living room-kitchen. Students are given an allotment of script each month. From this they pay rent, electricity bill, water bill, and with the rest they purchase food from our central storeroom. They cook their own breakfast and dinner. Luncheon is taken with other students in the school dining room due to lack of time for preparation. The students plan menus and these are checked by the Home Ec. instructor for proper nutrition value and do their own cooking, cleaning, dishwashing, etc., as they will eventually do if living in an apartment or after marriage. This privilege is offered to all students at least once during the high school program and is offered to day students as well.

Most hearing high school age children have access to a car, either their own or their parents. We have a class in driver education and most of our students pass the examinations and receive driver licenses. If parents request it, high school students are allowed to come to school in their own cars. Day students park their cars when they come in the morning and do not use them again until they leave for home in the afternoon except with special permission. Other students drive from home to school on Sunday or Monday morning, park their cars and leave them until the following Friday when they use them to drive home for the week end. We were a bit apprehensive about this set up at first but in practice very few problems have been encountered. Misuse of this privilege means loss of the privilege and that has been deterrent enough. The student must take care of his own car and by the time he leaves school much of the glamour of having a car has worn off and he will be able to meet the problems of car ownership in a more mature and acceptable manner.

Student involvement in policy making at our school is an accepted thing. We have a student council that meets regularly with the Dean of Students and the recommendations they make for changes in school policy and rules go directly to the school administration and receive serious consideration. This is a two way street. Problems concerning students that confront the administration are often referred to the Student Council for recommendation. The school hair and grooming policy was drawn up by the Student Council and has been much more effective because that procedure was followed. An important project of the Student Council has been the Student Union. This has been set up in a room provided by the school. A canteen has been set up in part of this room and a shuffleboard, a pool table, a ping pong table, checkers and chess boards, some chairs and tables have been installed. With money earned from the canteen, and a special basketball game the Council was able to purchase a record player, amplifier and loud speakers to furnish music. Much remains to be done in the way of painting and making the room more presentable but the point is that the students themselves are doing it with a minimum of help from the school. Counselors and staff members drop in at odd times but the responsibility for conduct on and care of the premises has been taken by the students. They have shown themselves reasonably capable of doing the job.

Our students are active in national organizations such as the Jr. NAD, FHA girls, and the Kiwanis Key Club. These groups meet with an advisor but they are student oriented and student led. Participation in these groups, we feel, will lead to future participation in the affairs of the deaf on a state and national level. We also hope it will build interest in future participation in community affairs and service clubs.

Sex Education is provided as a part of a course in Family Living that is required of all high school students. The class is a one hour per day class covering a half year period. It is a co-ed class. Topics covered include dating, marriage, child birth, child care, etc., in a broad approach to family living. This course was developed and is taught by our Home Ec. instructor. Opportunity is provided for individual discussion and/or guidance if desired by the student or thought necessary by the instructor.

Drug abuse is also a part of our high school curriculum. It is presented as a part of the Modern Problems curriculum in the social science area. The course is objective, factual, and informational. Outside speakers are brought in, especially from law enforcement areas. We have had very little trouble concerning drug usage on our campus and feel that our students are reasonably well informed concerning the usage of drugs and the consequences. We have no reason to feel complacent about this problem and give it close and continuing attention. We feel that by avoiding scare tactics and keeping the subject on a factual and informational basis the door is kept open for guidance and counseling on an individual basis when needed.

We have tried, not too successfully, to interest students in leisure time activities. This would be a hobby of some sort that the student might pursue after leaving school. Knitting was very popular with the girls at one time. Interest has been shown in cutting and polishing agates and other stones. Numerous arts and crafts projects are available for any who wish to try them. Participation is voluntary, encouraged but not required.

Our overall effort has been along the line of getting away from the role of being policeman and disciplinarian and moving towards a more positive role of adviser and counsellor. We are trying to build controls from within the child rather than imposing them from without. Inservice programs are set up for dormitory personnel to plan, discuss, and initiate these and other efforts to meet the social needs of the students. It is necessary to keep these approaches flexible and on a continuing basis. We haven't solved the problem, we will not solve it tomorrow, next week, or possibly ever. We are simply working on the problem and doing things. Some may be right and some may be wrong but right or wrong, we are doing things. We are willing to scrap any approach that does not work as it should and try a new tack.

PSYCHODYNAMICS SURROUNDING THE DIAGNOSIS OF A CHILD'S DEAFNESS

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The psychodynamics which occur when parents discover their child is deaf are of vital, often permanent, consequences to the family and to the deaf child. These crucial processes which have their actual beginnings at the time of pregnancy and even before, gradually evolve within the family as the deaf child approaches adulthood.

The impact on parents of the diagnosis of deafness in their child and the counseling of these families is a little-understood almost universally mishandled process. The lack of knowledge and the errors involved have serious effects which are often irreversible (Grinker, 1969: 81–82; Mindel and Vernon, 1972). These errors and omissions in counseling tend to be more devastating to the child and family than the deafness itself.

Thus, competent parent counseling is one of the most important services an audiological or otological clinic can offer a deaf child an his parents. Paradoxically, it is the rarest service offered. Instead, parents generally get well-intended misinformation about psychosocial aspects of deafness which creates false hopes leading to problems and maladjustment.

What follows is a discussion, starting at the time of pregnancy, of the psychodynamics surrounding the diagnosis of deafness in a child. The author's perspective, based in part on research (Meadow, 1968; Grinker, 1969: 81–84) and in part on 20 years of clinical experience, is that effective family communication is basic to coping with deafness. Corollary to this perspective is the belief that for such communication to be established requires the use of fingerspelling and sign language along with speech, lipreading, and amplification.

Pregnancy

Often pregnancies occur at times when they were not planned and in many cases were not wanted. Even in couples with whom a pregnancy is desired and comes at a convenient time, there is ambivalence. On the one hand are high expectations and hopes. Feelings of fulfillment and family closeness may develop. There also are hostile attitudes due to the added responsibility, the disfigurement, the demands, etc. Sometimes there is a blaming of one spouse by the other for the carelessness that led to conception.

These mixed feelings about the pregnancy inevitably result in some wishful fantasies that the pregnancy may end prematurely. There also may be deliberate violations of clearly understood rules of prenatal care, violations such as carrying heavy loads of laundry, riding horseback, or engaging in other inappropriate physical activity, or taking very hot baths. More direct attempts to abort involving quinine, probing of the uterus, drinking turpentine, etc., while rarely mentioned in professional literature are well known by obstetricians and psychotherapists who work with young parents.

The point to be made is that it is important to be aware of how widespread these kinds of feelings and fantasies are on the part of normal parents. They have tremendous implications relative to the feelings of guilt and denial which occur later if their child is diagnosed to be deaf.

EARLY YEARS

Generally it is one to three years after birth before deafness is discovered. Part of the reason for this is that few infants have total hearing losses. Most respond to the gross sounds of airplanes roaring overhead, motors backfiring, and pots and pans banging. This masks their inability to understand speech sounds. It is this inability to hear speech well enough to understand it which is what deafness is.

Even though there is a delay in the actual discovery of deafness, parents generally sense something is wrong long before a diagnosis has been made. For example they miss the subtle responses and reactions to sound which are basic to the mothering process. Parental expectations are often unfulfilled because of a lack of responsiveness and because of developmental slowness in some areas.

Gradually anxiety develops. The mother may wonder if the child is retarded. Questions start to arise such as "Why doesn't my child talk?" or "Is something wrong? Our baby does not talk."

Some of these expressions are rather common manifestations of the anxieties of many mothers of normal children. Therefore, they often are passed off by physicians and others with clichés such as "He'll grow out of it," "Everything is fine, now just don't worry," or "Just give him time."

While these responses may temporarily, albeit falsely, allay concern, before long they arouse increasing frustration, confusion, and anxiety in the family. The parents realize something is drastically wrong, yet their communication about this is essentially ignored and they often are given contrary-to-fact information.

This failure to make the diagnosis of deafness has two serious impacts. First, it delays habilitation past a period some believe is crucial in the psychological and educational development of the child. Second, it causes confusion, anxiety, fear, anger, and guilt feelings in the parents partly because such feelings cannot constructively be channeled toward the resolution of the child's problem until the family is told what the problem is.

While a failure to detect deafness is bad enough, far worse are the misdiagnoses which occur in at least one-third of parents of deaf children (Mindel and Vernon, 1971:31–32). Some of these misdiagnoses grow out of the complex problem of the differential diagnoses between brain damage, aphasia, delayed speech, autism, childhood schizophrenia, mental retardation and deafness (Hefferman, 1955:274).

The situation is illustrated by the documented report of a psychologist who in his own private practice found fifteen deaf persons in institutions for the mentally retarded who were not retarded (Vernon and Kilcullen, 1972). One of these was the daughter of an ophthalmologist who spent five years beginning when she was two, in a hospital for the retarded. Another boy, now in college, spent three years in the same hospital. A recent deaf graduate student at Western once spent 2 years in a facility for the retarded.

The most gross of these misdiagnoses usually are made in cases of multiple handicapped deaf children, those who have profound hearing losses and cerebral palsy, vestibular pathology, or some other additional disability.

While this may make the errors more understandable, it also causes them to be more destructive as they compound the difficulties of a child already doubly handicapped. However, to imply that all or even most of the one-third of deaf children misdiagnosed or undiagnosed are multiply handicapped would be incorrect. While physicians most often are to blame, some of the grossest errors are made by psychologists who give verbal tests to nonverbal deaf children, an unpardonable mistake.

A major point to be derived from this is that delayed speech or apparent failure to respond to sound should never be ignored, nor should a diagnosis be made in such cases until hearing has been thoroughly tested audiologically.

To return to the issue of the age at which deafness is discovered, this varies with the experience of the parent and that of the doctor. Often, in interviews parents who can recall the symptoms of the deafness they observed in their child claim never to have associated these with hearing loss. For example, the mother may say, "Mary did not respond to my voice," "Ann was disobedient," "Frank slept with the vacuum cleaner on" or "He slept right through the fireworks, on the Fourth of July."

THE DIAGNOSIS OF DEAFNESS

By the time deafness is finally diagnosed, the child is usually in his second or third year. For some parents, the finding of deafness results in an initial feeling of relief due to previously having been told the child was retarded, autistic, or had some other problem perceived to be worse than deafness. However, to most families the discovery of deafness is a traumatic blow, the full depth of which is rarely sensed by the professional making the diagnosis. It is common for parents to say, "I do not remember a thing the doctor said after I was told my child was deaf."

There has been some excellent research on how families cope with the discovery that they have a child with a serious irreversible disability. The work by Hamburg (1953), Cholden (1958:241), and others (Grinker, 1969:63; Siller, 1969) establishes several general principles crucial to making and communicating to the family the diagnosis of deafness.

The first of these principles is that constructive and effective coping with a permanent disability begins only after the patient and family are fully aware of the irreversibility of the condition and of its total implications. As long as hope is extended for a possible cure or there is indication given that the ramifications of the disability can be overcome, patients and their families do not adjust to the reality of deafness and the resulting new life circumstances.

When and if a person realizes exactly what changes will have to be made in his life, then the kinds of adaptations that are effective become possible. This generalization holds true across disability groups and is a fundamental premise upon which all rehabilitation must begin (Siller, 1969). It places tremendous responsibility upon the person who informs parents that their child is deaf, a responsibility for which most are unprepared.

The second principle deriving from research on reaction to disability is that certain defenses or coping procedures are almost universal. The most important of these is an initial denial of the defect or at least a denial of its implications.

Denial and Deafness

Denial is a normal coping mechanism through which human beings initially protect themselves at a time of trauma. Studies of parents of leukemic children and of blind persons illustrate the process (Cholden, 1958:182; Hamburg, 1953). It is when denial becomes chronic that it is pathological and prevents constructive adjustment to disability.

At the time a child is discovered to be deaf, the deafness is initially denied. For example, parents who have previous children usually sense something different in the deaf child within the first year, but this awareness rarely is dealt with directly. Sometimes it is the grandparents, relatives, or neighbors of the child who finally force the parent to face the fact that their child is deaf. Even when parents identify and acknowledge deafness and want to do something about it they often are told by the doctor that the child will grow out of it or that everything is going to be all right. Thus, there is a denial of the deafness on the part of parents and the professional community (Mindel and Vernon, 1971:22–24).

When the diagnosis is finally made, the power of denial becomes more vivid. No longer is it the blatant denial of the deafness per se but the more subtle and destructive denial of the implications of profound hearing loss.

To go back a step, after suspecting deafness for some time, parents finally are told their child is deaf. But are they really told this? What actually happens?

Generally the full implications of deafness are not explained (Grinker, 1969:81–84; Mindel and Vernon, 1971:22–24). In some cases almost nothing is said about what deafness means in the life of the child and his family. Parents may be told only that the child is deaf and that they should go home and wait until he is old enough to attend school.

On occasion the professional who makes the diagnosis (the audiologist, or the physician) informs the parent that their child is deaf, but that a hearing aid, speech lessons, and lipreading instruction will be provided. This can be helpful. The danger is that parents are often led to believe that although the child is deaf, prostheses and training are going to enable him to function as though he were not deaf. Rarely when parents are informed of the deafness are they given time to really sit down and talk about it and to work through the very intense feelings that occur at this time and persist over the weeks and months that follow.

Thus, there are several crucially important occurrences that take place around the diagnosis of deafness and in the period that follows. First, is the frequent denial of the full implications of deafness by the professional with whom the parent is in contact. This is subtle and usually unintentional. It occurs in the form of inaccurate statements about the speech potential of deaf children and the ultimate functional value of the speech deaf persons are able to develop. Overly optimistic statements, implied or explicit, about the values of hearing aids and the effectiveness of lipreading further compound the problem. Euphemism's such as "He is just like any other child except he is deaf" blur the very real differences between being prelingually deaf and having normal hearing.

Unfortunately this distinction is glossed over by many who counsel parents. What pervades the field of deafness is the professional who fosters a denial of the implications of deafness for the Deaf child and the entire family. Because deafness is invisible, the denial is easier to effect than with disabilities which are more apparent. For example in a leukemic child, as the disease progresses, the changes are so vivid that denial is impossible.

The second phenomenon which is related to diagnosis is that mourning over loss of hearing is rarely fully experienced as an intense grief which is worked through psychologically (Grinker, 1969:61). In a gesture of false kindness professionals, physicians and educators in particular, often help the parent deny the loss. Thus, the mourning which should be experienced is chronically repressed. It becomes a grief that the parents and the deaf persons live with indefinitely. This denial is apparent in psychological interviews with parents of deaf children who, when discussing the deafness of fully grown sons and daughters, frequently are brought to tears by grief which has never been fully worked through psychologically. Chronic denial has been substituted.

Relationship of Denial and Family Stress

A breakdown in communication between family members is one of the severest of psychological stresses. The denial of the communication problems of deafness creates in the families of deaf children this kind of stress. The problem grows out of the following difficulties and limitations posed by lipreading and speech for persons deafened prelingually.

Two-thirds of the 42 sounds that make up the English language are either invisible or else they look just like some other sound on the lips (Hardy, 1970: 337). Furthermore, among the most difficult sounds to lipread are the most important ones, for example, the vowels. The few sounds that are visible for speechreading must be grasped in the fleeting instant that they are on the lips (Hardy, 1970: 337).

As a consequence of this ambiguity the world's best lipreaders get about one-fourth of what is said, and they are not deaf (Lowell, 1957–1958). One reason they are not deaf is that in order to lipread for comprehension one must have an adequate command of language (Hardy, 1970: 336). Children prelingually deafened do not have this command of language (Mindel and Vernon, 1971: 86-97). In fact they are expected to learn language through a process which presupposes that they already have language skill. As a consequence of all this the average deaf child gets about 5 percent of what is said when he depends upon lipreading (Lowell, 1957–1958; Mindel and Vernon, 1971: 86–97; Vernon, 1970).

Speech for a person born deaf will never be normal and much of it will not be intelligible. In addition to this speech problem, learning language is difficult for a person born deaf because he does not hear it and thereby gets little exposure to it. If he is forced to try to learn language just through lipreading his task is almost impossible. Evidence of this is that over 30 percent of deaf school leavers are functionally illiterate, and only 5 percent achieve a tenth grade achievement level. Most of the latter are actually hard of hearing or adventitiously deaf (McClure, 1966).

These facts are not presented to parents because they are not known by many of those who diagnose deafness. If the facts were presented it would be painful, but it would also be reality. Until the reality of deafness is known, the parent and child cannot cope constructively. Consequently there is a communication breakdown and a huge discrepancy between parents' expectations and the child's attainment, which creates intense frustration.

The frustration leads to an underlying stress and anger for which parents are given no constructive outlet. The result is pervasive and destructive not only to the mother and father, but to the child. One manifestation is an avoidance of child-parent interaction because the interaction when attempted is so stressful and frustrating that both the child and the parent understandably want to escape it. Thus, the deaf child is often an isolate in his own home, losing the emotional and educational benefits he needs from close parental contact. The parent in turn misses the satisfactions from their child that they have the right to expect. In extreme cases, when the deaf child comes home from school for the weekend, his parents give him money and send him to the movies and tell him to stay until bedtime. More common, however, is a gradual, subtle withdrawal of interaction between the parent and the child.

Another result of the denial of the communication implications of deafness and the accompanying stress is under-education. Deaf children have the same IQ distribution as hearing children, yet as indicated earlier 30 percent are functionally illiterate when they leave school (Mindel and Vernon, 1971:91). Sixty percent test at fifth grade or below. Only 5 percent of deaf school leavers of 16 years of age or older test as high as 10th grade on achievement tests (McClure, 1966). An obvious corollary of this under-education is unemployment and underemployment.

Even more tragic is the deaf person's tendency to be emotionally separated from his family. Many deaf adults are extremely bitter about their treatment by their families. They are hurt by being excluded from activities such as meal time conversation and the planning of family activities.

CONSTRUCTIVE COPING

Total communication which involves the use of fingerspelling and the language of signs in conjunction with speech, lipreading, and amplification, offers a reasonable resolution of communication problems faced by the family with a deaf child. The addition of manual communication (fingerspelling and the language of signs) in no way impedes the development of oral communication skills (Meadow, 1968; Vernon and Koh, 1970 and 1971). Its value is that it does not have the ambiguity inherent in speech and lipreading. Thus, full communication between the deaf child and his parents is possible, eliminating much of the stress, frustration, and anger growing out of a limitation to oral communication.

It is only recently that a few parents of young deaf children have begun to be counseled to use both manual and oral communication simultaneously with their deaf children. While certainly not a panacea, this approach of total communication is a step forward. In fact its potential is so great that the National Association of the Deaf, the world's largest organization for the deaf, has officially endorsed the approach.

Summary

The psychodynamics which surround the diagnosis of deafness have crucial long lasting effects on the deaf child and his family. Key variables affecting coping procedures are the character structure of the parents, the counseling they receive, their attitudes toward having a child, the degree to which denial is used in coping, and the stress resulting from communication problems concomitant to deafness.

The degree of denial of the implications of deafness by professionals in the field and by parents is a major block to successful coping with deafness for both the parents and the child. Part of the communicational aspect of the problem centers around the ambiguity of lipreading and amplified sound to the deaf child and the limitations of the speech of deaf children. The use of fingerspelling and sign language in conjunction with oral communication is a practical way to cope the this part of the problem. Counseling needs to be geared to overcoming denial of the implications of deafness and the providing of parents with realistic recommendations for coping especially with the communication problem of deafness.

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TANGIBLES AND INTANGIBLES OF BEHAVIORAL MANAGEMENT WITH STUDENTS

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"I have never had a student I didn't learn to appreciate!" An educator of children with a declaration philosophy such as this has that needed gift to succeed in directing the behavioral patterns of children under his guidance.

One of the high priority items on the list of individual attributes of a new teacher of the deaf, just has to be personality with a big, big "P". Next in line, your writer places enthusiasm with a huge, huge "E." And thirdly, let's give a small "T" to training. Place them in continuity of priority and you have the P.E.T. philosophy of behavioral management by objectives with our deaf children.

Many of the great teachers of the deaf your writer has known had that intangible set of qualities of relating to students. Volumes have been devoted to respondent and operant behavior involving human beings within self and within his environment. There is no need to reiterate a basic course in psychology within this discussion. The objective of this discussion is to focus upon those qualities of teacher, student and administrator which formulate into a unified system of meeting deviant behavior of the exceptional deaf child.

THE TEACHER-CHILD RELATIONSHIP

If we apply Wahl's P.E.T. theory in the determination of teacher selection to a faculty, the vast majority of teacher-student conflicts will be eliminated after the initial orientation stages. Prospective teachers cannot realistically be evaluated and appointed to a school for the deaf teaching faculty based solely upon collegiate transcripts and honors and accompanying professional recommendations. The measurement of a teacher's innate personality traits is an intangible and most often can be empirically evaluated only after a myriad of teacher-child conditions have been experienced in a given milieu. How effective the teacher relates to a nuclei of behavioral deviations by his children, and only then, can a formidable evaluation be recorded in the behavioral management arena.

A teacher may have been very effective in one teaching situation within a school setting serving normal deaf children and be completely ineffective in his role within a new school dealing with a varying school and classroom student population. Just as we have the ineffective analytical speechreader among our deaf children, we may also have professionals who believe and function as teaching and relating to children is a pure science. The stimulus-response conditioning is not always uniform without equal awareness by the teacher of the antecedent and contingency considerations in relation to the child.

The utilization of teacher-child rewards has been thoroughly defined through B. F. Skinner, et al, discourse and need not be reiterated herein. Since life is a series of work or play experiences with rewards of either intrinsic or extrinsic values attached, the reaping of acceptable behavioral responses by the student demands teacher centered creativity. The teachers vary in their daily operational procedures in the Gallaudet School for the Deaf. The range of conditioning devices range from value tokens, to real monies, to positive stars and negative removal of same, to removal of articles of clothing on the younger set, to pure verbal praise, to taking a supreme academic paper or the first "K" speech sound to all teachers' rooms for show purposes, to grandeur athletic and playlet showmanships. In supportive rewards are the fleeting, but effective hug of a child for an accomplishment or a smile and a transference of communication by the teacher to the student which says, "You are wonderful and I love you, both for your accomplishment and for yourself!"

THE ADMINISTRATOR

One of the joys and challenges of serving the deaf within a public educational setting is the range of daily contacts an administrator experiences. The whole gamut of a social community enters the communication contact with the administrator and his staff, seeking guidance and counsel, pleading the case of a nine year old deaf child who has never set foot into any formal education program, or trying to determine what one teacher should be selected for a retirement vacancy from a list of 30 highly qualified candidates. Couple this with the establishment of a teacher-child-parent centered ongoing curricular and co-curricular program and a continuity of change and creativity to meet the psychological, sociological and educational needs of the deaf child, and we see the stress for incorporating the best known to our children.

The atmosphere created for a compassionate involvement with deaf children with behavioral deviations is perpetrated by the extension of the administrator and his staff. Too often staff officers, supervising teachers and teachers themselves become burdened and obliterated by daily functions not related to the deaf child and his innate welfare.

An administrator's first obligation is to his students, their parents and to his teachers. The increased demands upon public educational institutions to incorporate programs for deaf children with extreme behavioral and learning dysfunctions makes involvement at the grass roots levels, namely at the teacher-child base of operations, mandatory. If the professional administrator is too removed from the trauma of a teacher and his child in the struggles for acceptance, it is his responsibility to surround himself with professionals who can do that priority job.

CONCLUSIONS

1. Application of the P.E.T. (Personality, Enthusiasm, Training) Theory of the writer to the selectivity of teachers of the deaf child, will enhance the relationships of the child to the peer group and diminish the deviant behavior of the atypical child.
2. Rewards can be utilized to secure desired behavioral objectives within the limitations of the school milieu.
3. Creativity of the educators, staff officers and firing line personnel, determine the atmosphere for dealing with the social, psychological, physiological and educational requirements for the individual child.
4. The foremost professional obligation of the administrator is to his students, their parents and to his teachers.

OLD WHINES, NEW BATTLES

Hollis W. Wyks, director, Day School Programs for the Deaf and Hearing Impaired, New Jersey State Department of Education Trenton

I have thought to myself, as I am sure some of you must be thinking, after delivering some two dozen "talks" or speeches to groups like you today over the past six or seven years, what can I say that I have not already said in terms of our topic. I have talked about curriculum, course offerings, philosophy, staffing, media, funding and the "state of the Art" in general. I have soft soaped, soft selled, hard selled and even insulted (which is against my nature) in an attempt to put across the importance of a quality vocational program in schools for the deaf. In my present frustrated state I even stole the title for my talk, "Old Whines, New Battles" (from Dr. Ralph Garber, Dean of the George Warren Brown Graduate School of Social Work, Washington University, St. Louis, Missouri) in an effort to stimulate myself "one more time" to attack the subject at hand. Actually, as I look at it now, the title with its play on words does fit the present state of affairs as well as the future.

We can all hear the "Old Whines" that go something like:" Vocational Education costs too much!", "Our school is too small," "Our State isn't industrial enough to support a program" and the clincher, the oldest chestnut of all, "Vocational Education trains for jobs that don't exist any more." Of course the modern version of that is, "The jobs of today won't be here 10 years from now!" Talk like that really instills confidence; talk like that helped produce a generation of antisociety dropouts called "Hippies." Actually education is the only system that blames the product for its own failure. (Loosely translated that comes out to be "Accountability" which in turn is one of the "New Battles" I will speak to in a few moments.) To prove our point we often rate the so-called product by his "certified" or "accredited" program and yet one of the strongest arguments against accreditation is its tendency to regiment, limit innovation and to institutionalize outmoded patterns be they vocational or academic. (Loosely translated, your program becomes stagnant!)

One of the "New Battles" to be fought is the concept of career education. Recently in New Orleans there was a conference sponsored by the American Vocational Association and the Council of Exceptional Children. A.V.A. and C.E.C. are supporting the development of comprehensive Career Education programs. Generally accepted the sequential pattern is: K–6 Career Awareness; 7–9th grades Career Orientation; and 10–12th grades Vocational and Technical Experience. New Jersey is funding ten Career Education sites, of which all of the programs have the following components: Technology for Children, Introduction to Vocation, Career Resource Center, including a multi media center and job placement coordinator, intensive occupational and educational preparation, and coupled work study program. The intensive occupational unit is interesting in that non-goal oriented students at this stage receive a program to prepare them with entry level saleable skills while those interested in post secondary work also explore the community college programs available. I ask why is this concept not a viable one for schools for the deaf? Programs like those I have just described recognize the importance of the ancillary skills required of all individuals to live personally, as a member of a family, as a consumer and as a citizen in a democracy. It provides education and training realistically in terms of the needs of the individual and his intellectual capacity even though its primary purpose is job preparation. It must be of sufficient length and breadth to permit both male and female students, of high or low manipulative skills or academic ability, an opportunity to study an occupation. Those enrolled in any specific vocational program are those who can profit from the instruction and who can qualify for placement upon completion. In line with this last thought, the objectives should be stated in such manner as to permit employers and other educational institutions to know what to expect of students who have completed any given program. This is a "New Battle" to be fought for and won as the parameters of our vocational education programs and services are constrained to the boundaries and limitations of conventional educational programs and activities which are geared, primarily, to non-employment bound youth.

The background preparation and experiences of many administrative leaders, staff members and school organizational patterns mitigate against implementing new concepts in vocational-technical education and training. This is particularly true in our occupational orientation needs of deaf youth in metropolitan cities and those from rural America. It surely manifests itself in the unrealistic certification and preparation of persons to provide occupational guidance, counseling, referral, placement and follow-up services. These guidance and counseling services are generally constricted to provide major input for the non-employment bound youth and are unrelated for the employment bound youth. Further, they are usually non-existent for out-of-school youth and adults. To earn its keep today, a quality program of educational value operates not only during the day, but during the evening as well. And, if needed, on days when school is not normally in operation to serve those in school, to serve those who have completed or discontinued their formal education and are preparing to enter the labor market, those who have already entered the labor market but need to up-grade their skills or learn new ones, and those with special educational handicaps. Vocational Education programs are administered and supervised at the State level by personnel who are properly prepared and experienced in vocational education; who understand the needs of employment-bound youth and the needs of business and industry; and who are able to work effectively with employers, labor, school authorities, social and other agencies concerned with worker education.

At the local level, the School for the Deaf level, the same should hold true. The instructional program should be conducted by instructors who have had bona fide experience in the occupation being taught and the education and training in the theory and skills of teaching vocational subjects to deaf students. Never hesitate to recruit from the world of work whenever this makes for a more sound and realistic program. The equipment and physical facilities are to be as nearly like the industrial situation as it is possible to achieve. Flexibility of construction and layout is a must so that essential change and updating of equipment and facilities are not only encouraged but easily attainable.

Much of what I have said is known to many of you and yet we still have that discrepancy, the diversity of programs nationally. In testimony before the Senate Sub-Committee on the Handicapped, Dr. Daniel Ringelheim, Deputy Assistant Commissioner of Education in New Jersey, and a member of the National Advisory Committee on Handicapped Children, made note that "the evident diversity throughout the Nation (for all handicaps) in a large measure, is due to the inter-relationship between such factors as public attitudes, philosophical commitment, political and legislative interest and activism, local and State fiscal status, long term and more expedient priorities of the states and the latest critical variable, class action court suits. The courts have suddenly become the conscience of the community and the means by which parents have sought redress from the variety of barriers in the path of a quality education for their handicapped children." For those of you from California, Pennsylvania, Texas and my own State of New Jersey we know that here is a "New Battle" to join in response to an "Old Whine." We are, of course, talking about accountability among other things, but definitely professional accountability. This battle comes at a time when we are girding for a real all out onslaught in the form of the Rubella Bulge. With this bulge not only come abnormal numbers (33% of New Jersey's 1,348 students are between 8.2 years and 9.2 years as of 9/1/73) but they bring with them a change in the make-up of our population. While literature is not extensive, considerable documentation must be available, but not in any organized form or place at this time, that we could compare student groups of 10, 15 and 20 years past with that information gathered by the Office of Demographic Studies and published by Gallaudet College for the children of the 1970's. We know that the percentage of those born deaf is higher now, that the Rubella group harbors children with more than the handicap of deafness and all of this comes at a time when, as professionals, we are being held accountable to provide programs of unusual circumstance in our field. We must sensitize the "community" to establish honest specifications for these children despite the cost. We must consider this an investment in humanity for to quote Dr. Ringelheim once more:

> One would find an overabundance of limited or no service, . . . a major number of makeshift and poor quality programs and services, . . . a major shortage of quality personnel and, all too infrequently, a program which satisfies the edu-

cational needs of the handicapped child, the emotional needs and aspirations of the parents and the rigorous desires of the professionals to provide the full measure of opportunity for the children they serve.

PIAGET WORKSHOP—COGNITION AND LEARNING

Sydney Wolff, assistant professor, State University of New York. Geneseo

Deaf individuals as a group do not reach the stage of formal thinking commensurate with their chronological age. Formal thinking is characterized by the mental manipulation of experience, the ability to organize thoughts and make hypotheses to reflect upon situations to comprehend the meaning of events and to intelligently choose among alternatives. A great many studies have shown the difficulty of the deaf to realize full potential within the framework of the traditional classroom in schools for the deaf. These researches have demonstrated the great rigidity of the deaf in sorting, in classifying, in attacking problems, and in developing the requisite cognitive skills.

And yet the researches of Oléron, Furth and others have shown that the deaf do not exhibit any fundamental difference in logical elementary capacities. It would be predicted that the stages of mental development at which logical operations emerge do not differ from hearing children.

In terms of the developing intelligence, the preschool and primary years of school are the most important.

Unfortunately we are not often aware of the faulty thinking of the children until they are in high school and then we rely on subject matter to correct the faults. The teachers who work with the brightest and the most successful students in the preparatory and vestibule programs at Gallaudet College and at N.T.I.D. are very well aware that these students do not exercise formal operational thought with any consistency. They have not had the foundation for it. And what of the students who do not enter these institutions?

Teachers generally are unaware of the vital role cognitive development plays in scholastic achievement, and of the techniques and materials which can be used to foster and nourish intellectual growth.

We cannot correct this situation or improve the existing education for the deaf by sending a handful of new teachers into an established system. Enthusiasm for change and an understanding of valid reasons for change must grow up within the system; we cannot impose it externally.

In the fall of 1972, the Inservice Teacher Training in Cognition was instituted in three upstate New York schools for the deaf. This program is supported by CREED (Cooperative Research Endeavors in the Education of the Deaf) which the schools for the deaf in New York State and the Bureau for Physically Handicapped Children support in a cooperative manner. At St. Mary's School for the Deaf in Buffalo, Rochester School for the Deaf, and the New York State School for the Deaf at Rome, the Inservice Teacher Training in Cognition team worked with classroom teachers in the application of Piaget's theory through practical games and activities hoping to demonstrate a more realistic view of the experience of knowledge. Under the direction of Sydney Wolff, assistant professor of Special

Education at the State University of New York at Geneseo, the project presents non-verbal activities through which the deaf students will acquire conceptual bases for language that is not usually present in the deaf. The research project is designed to show teachers activities that students can experience, such as ordering, sorting, perspective, strategy, discovering and probability. Two teacher trainers, Mrs. Caryl Wolff and Sister Mary Agatha Burns, travelled each week to the three schools to conduct the teacher training. Eighteen teachers participated in each ten week session, which at this point was confined to the pre-primary, primary and elementary programs. The '73–'74 upstate program will extend into the intermediate and the high school departments. Four downstate schools and two staff members have been added for the '73–'74 program.

The most frequent question asked is: What do you expect? First, we would not expect someone to change their whole philosophy of teaching. But we would expect teachers to start asking and answering, questions—questions that relate to the new information on child development, the relationship of thinking to language, on the known variable aspects of development, such as the motor components. We expect that teachers will experience a better understanding of the structure of experience and knowledge, to see how they go together, the use of visual and motor encounter with problems. We do not expect teachers to abandon content or to spend their time on games, but we would like a more realistic view of what knowledge is. It is not content, nor is it non-verbal games. Teachers so often worry that children are just playing. They often are not aware of what the children are doing, or of what they are learning.

The child's motivation to learn lies in his growing intellectual skill, and it is the school's obligation to present material that fosters and nurtures the spontaneous development of his thinking. The school must do this in the elementary years, before the child learns, as he does at present, that school success is based on language skills. For the deaf child the emphasis on the medium of communication promotes school failure. The medium, that is, oral language, sign, finger spelling, should be secondary to the activity. Language comes from thinking; thinking is not based on language.

Piaget defines the intellectual growth process: Knowledge is not content of thinking, it is the understanding, the behavior of the child. Each behavior has some level of knowledge implicit in it. Many actions have the same content; the level of understanding and behavior differ as the child grows through the sensorimotor operatory concrete and formal stages.

The teacher fails the child when he gives information at a level that is more adult than the child's understanding. That is, a formal lecture has very little meaning to a child who is mastering concrete operations. To the age of formal operations the child learns through experience. Learning is an action process as is knowing. The school fails because it is concerned with symbolic knowledge, which is not inherently superior to concrete knowledge, but which the child is not ready to produce. When learning involves thinking, it is intentional. For children, concrete experience is new. It represents the mystery of the unknown and hence is challenging. A learning experience is a concrete environment, made for exploration and manipulation.

Because education is traditionally language based, the deaf with no language, have a high incidence of academic failure. Piaget is especially applicable to the deaf, because his is the only theory of knowledge which does not consider intelligence to be language based. The deaf child will be naturally motivated to learn if his entire success and failure is not based on his language ability.

The Piaget Workshop was a demonstration of a number of the thinking games and activities. One onlooker loudly commented that it was a carnival, and the description was appropriate as all who attended were invited to participate in the activities led by the staff and teachers from the various schools and workshops of the past year.

Permutation was demonstrated by Carl Alberico and Polly Benedict with Bali Buttons People Puzzles and Latin Squares. Norma Houghton and Sister Mary Agatha Burns lead the logic activities of one attribute change and circle sorting. Symbolic picture logic was presented in two stages by Caryl Wolff and Barry Jones, and inductive logic strategy games were lead by Helen Minihan. Jacquie Longchamps and Steven Schultz involved participants in movement and role play, while at the opposite end of the University Room Mary Lou Oltmann demonstrated movement thinking with body lifts and related activities. Dennis Marsh used an overhead projector and blackboard for perspective flips. Elizabeth and Thaddeus Wolff played shape analysis games and Shelley Schultz demonstrated probability.

The demonstration workshop put teachers in the place of learners and it is hoped that from this position the teachers could better understand the developmental nature of concept formation and formulate challenging activities with the children in their classrooms. All of these activities are characteristic intellectual activities of all children and as Piaget stated, "the logic of development is the development of logic." The Workshop's purpose was to demonstrate to teachers characteristic thinking activities which are appropriate not only in themselves but are fundamental activities to the teaching of subject matter.

DEMONSTRATION MATERIALS

Circle Sorting, one attribute change: Attribute Blocks, Venn Diagrams Invicta Plastics Ltd. Distributed by: General Learning Corp., 4200 North Industrial Blvd., Indianapolis, Indiana 46254

Permutation: Inch Cubes. Developmental Learning Materials, 3505 North Ashland Avenue, Chicago, Illinois 60657

People Cards.

We made ours, but a fairly good kit for sorting, which includes people tiles may be purchased from: Webster Division ESS (Elementary Science Study). McGraw-Hill Bldg., 1221 Avenue of the Americas, New York, N.Y. 10020

Shape Analysis: Shape Analysis Cards. Philograph Publications, Ltd., Fulham, London, England

Probability: Solid Colored Marbles. Marble King, Berry Pink Industries, P.O. Box 195, Paden City, W. Va. 26159

Two books we generally recommend to beginning readers of developmental learning theory are: *Understanding Piaget*, by Mary Ann Pulaski, Harper and Row, 1971, and *In the Early World*, by Elwyn S. Richardson, Pantheon Books, Random House 1964.

Charles C. Thomas will publish our teacher's handbook on these activities in the Fall of this year. At this moment the title is *Let's Think; Cognitive Activities for Teachers and Children* by Sydney and Caryl Wolff.

LANGUAGE ACQUISITION IN DEAF CHILDREN

Alfred H. White, Ph. D., supervisor/director of Research, Maryland School for the Deaf, Frederick

If we as deaf educators have learned nothing more from our colleagues in the science of linguistics, we should have learned this: Language, nor its rules can be taught or stamped into deaf children; language is not an acquired set of habits.

Quite to the contrary language is a complex system of communication governed by a tacit set of grammatical rules. These rules, although never completely understood or appreciated by a child or an adult, govern linguistic output. The rules are acquired as a result of a child's exposure to a quality-quantity linguistic input. The most characteristic feature of the syntactic rules is their generative aspect. It has been hypothesized that by means of a finite set of linguistic principles or rules an infinite number of grammatical sentences can be generated; to date there is no satisfactory rival hypothesis to account for a person's use of language.

Traditionally teachers have been inclined to try and "teach" language principles. Currently however it seems much more consistent with what we know about language learning for significant persons in the environment to rely upon a deaf child's innate ability to acquire language and thus view themselves as a facilitator of language learning by providing a quality-quantity linguistic input.

By a quality-quantity linguistic input it is meant that: (1) The word order of language must be perceived by the child; (2) the complexity of the structures presented to the child must not exceed his ability to assimilate them; (3) the child must have multiple exposure to structures in the target language.

Preserving the same notions but being less theoretical one might say that the only prerequisite for language learning is that the deaf child be exposed to a rich linguistic environment. To members of the staff at the Maryland School for the Deaf a rich linguistic environment means: (1) An environment where parents and siblings are using total communication consistently; that is, they use it when the child is being addressed personally and when he is only on the fringes of family communication. (2) It means that the environment of the classroom is one where total communication is used consistently and effectively. (3) It means that in the process of communicating all persons make an effort to include some of the more difficult but essential aspects of sentence structure; namely, such morphones as "ing," "ed," and plurals. It means persons in the environment differentiate between irregularities such as "have" "had" and "has". (4) It means that the vast majority of a child's exposure to language comes to him through natural spontaneous communication.

It's a pleasure to be here today and present what we at the Maryland School for the Deaf feel is evidence supporting the assertion that children with a profound hearing impairment can acquire the rules governing the use of language in a way very similar to that of a hearing child if their environment is indeed rich.

We have brought with us today some video tapes of children who have been exposed to a rich linguistic environment and who are in fact using many of the constructions common to hearing children.

It is our objective at the school to access each child's expressive and receptive skills at the beginning and the end of each school year and to incorporate the results of these assessments into a kind of communication profile. More specifically we wish to assess among other things a child's ability to use standard English while communicating through the combined use of speech, signs and fingerspelling. In our efforts to do this we have been developing a series of pictures designed to elicit certain language constructions. As a child attempts to describe what he sees in the picture he is video taped; then later staff members transcribe what the child said. These transcriptions are then subjected to syntactic analysis. Pilot efforts to date have been encouraging. (As an aside, our long range objective is standardization of the procedure for eliciting and assessing language. If any of you associated with primary age children would be interested in cooperative research, please write to the Director of Research, Maryland School for the Deaf, Frederick, Md.).

The language sample below is a transcription of a profoundly deaf youngster who was 5 years 7 months at the time of video taping. He has hearing parents although he was born deaf. His parents use total communication at all times in the home, even when talking to each other and the child is "not really attending to them."

You will note that he uses some rather interesting syntactic structures:

(1) NP+VC+DO
    (VC=verb construction)
    VC consists of Verb + ed construction and
    Be + Verb + ing
(2) He also has structures of the type: NP+VC+DO+IDO
(3) He demonstrates competence through use of some sophisticated transformations:
    (1) Indirect object inversion transformation.
    (2) *To* deletion transformation.
(4) He does another interesting thing:
    (1) Splits a compound verb (cleaning up).
    (2) And appropriately applies the pronoun substitution for the direct object.
(5) Finally he demonstrates nearly perfect subject-verb agreement.

Language Transcription of Profoundly Deaf Child: 5 years 7 months

A girl
A cat
A boy is cutting the grass
A girl is water on the boy
The two girls are walking
    (?) inside the house
    (?) making cookies
They are getting cups
They are trying to open the milk
They are eating now

The girls dropped the milk
The mother is scolding the girls
The mother is cleaning it up
The father is giving the bear to the girl
The dog and the sheep are drinking milk
The boy is near the truck
A man is in the house
A man is giving the dog and the cat . . . (a) food
The man is getting a book on his head

(?) = Teacher asked child question.

Although every child at the school does not have the same competence as the child whose transcription is above, there is ample evidence that those children who have been exposed to and are consistently bombarded by a quality-quantity linguistic input will indeed acquire the rules of English. This means, of course, that both family and school must work hand in hand to satisfy the linguistic need of the deaf child.

PRESCHOOL VERBOTONAL AUDITORY TRAINING

Ellen B. Young, Western Pennsylvania School for the Deaf, Pittsburgh

Introduction

One of the major goals of the Verbotonal approach is to help the deaf child more effectively use his residual hearing in the perception and comprehension of spoken language. This goal is not easily attained. It requires years of concentrated work by both the teacher and the child. However, the Verbotonal teachers at the Western Pennsylvania School for the Deaf feel that the method described below is proving to be quite successful in promoting not only better use of residual hearing but, also, more intelligible speech and improved language usage.

Several years ago, most preschool teachers were delighted if a child with a profound hearing loss could discriminate between a drum and a horn, or between many beats and one beat on a drum. Today, the Verbotonal preschool teachers *expects* such a child to discriminate between meaningful vowel sounds (e.g., "Oh!" and "Ooh!"), short phrases (e.g., "A blue ball", "A little baby".) and sentences (e.g., "The boy fell down." "Daddy's at work.") Although the auditory training may at times seem slow and difficult, or even discouraging, it is a joy for both the teacher and the child when the child is successful in his attempts to hear and repeat meaningful speech. Not only is the child excited and pleased with himself, but he has taken a significant step toward closer and more meaningful contact with the aural environment surrounding him.

VERBOTONAL BASIC CONCEPTS

There are several concepts basic to the Verbotonal Method. (1) The first is that most deaf people are especially sensitive to the lower frequencies (500 Hz or below) which are critical to comprehending and developing intonation patterns. The second is that, because certain frequencies are badly distorted or are not heard by most deaf persons—

and may, in fact, greatly disturb them—filtered sound is preferable to flat responses. Both the Subag I group hearing aid and the Suvag II individual tutoring aid were developed by Petar Guberina, the originator of the Verbotonal approach, to help capitalize upon these two points. Both amplify very low frequency sound (down to approximately 20 Hz) and both permit selective use of frequency spectra of variable width. The Suvag I provides only limited selection, with low pass filters, as it is used in group situations, but the Suvag II can match or selectively amplify (with high, band, and low pass filters) the best frequencies for each individual child—i.e., those frequencies which he can best use in the perception of speech, those for which he has the most residual hearing and the least distortion.

The third and fourth concepts relate to the participation of the whole body in both the production and perception of speech. The involvement of the body in speech production is emphasized through body movements which are specifically correlated with spoken or articulatory parameters such as rhythm, relaxation, time, pause and tension. It is felt that the body also can and does serve to facilitiate sound perception, establishing a readiness or "set" for the incoming auditory stimuli. This perception is aided: (1) by use of vibrators, providing tactile cues to complement the auditory and to literally give a feeling for the intonation contours of the incoming sound, and (2) by previous and on-going experience in production of speech, providing remembered kinesthetic cues which can also be matched with the spoken input.

"Auditory training" with the Verbotonal method, therefore, uses training not only in auditory perception, discrimination, and memory, but in speech, body movements and rhythm. This training occurs in group lessons and in individual tutoring. Both the group and individual teachers are familiar with all the concepts basic to the Verbotonal method and are able to apply the concepts in their lessons.

VERBOTONAL EQUIPMENT

It would be useful at this point to describe the auditory training equipment used in the Verbotonal Method. In describing the equipment, Mirko Krapez (1970:2) has stated:

> The Suvag equipment is constructed so that in each stage of development of perception and speech, the teacher can use certain characteristics which are close to the abilities of perception and production of the child.

Suvag I.—This unit is used in both group and individual lessons. The frequency range is approximately 20 to 20,000 Hz. The major unique feature of this unit is that it is specifically built to amplify across a broad frequency range including the low frequencies. The vibrators which can be attached to the Suvag I unit also assist in providing wide range stimuli. Use of this vibrator, with or without earphones is proving to be very helpful with both beginning and advanced students.

Suvag II.—This unit is intended for use in individual tutoring. As noted above, the unique feature of this machine is that the frequency response can be set for each individual student, so that, through the use of filters, the student's "optimal field of hearing" may be enhanced.

Mini Suvag.—This is a small replica of the Suvag I and is worn as a regular hearing aid. It has a broad frequency response, but no filtering.

AUDITORY TRAINING

There are two important aspects of auditory training on the Verbotonal Method that must be understood. One is that auditory training is confined to listening to speech and is always done in the context of meaningful language. The other is that a child does not wear an individual aid until he has learned to use his residual hearing quite effectively for speech. This latter philosophy is in contrast to many current trends regarding hearing aids for young deaf children and is based on the theory that a child cannot benefit from amplification until he can discriminate meaningful auditory signs from noise.

Guidelines.—Mirko Krapez, (1970: 13–18) a Yugoslavian verbotonalist, who has helped train American Verbotonal teachers, has listed several guidelines a teacher should follow when doing auditory training.

1. The teacher follows a phonetical progression beginning with essentially low frequency words (e.g., baby, Mama) and progressing to words having higher frequencies (e.g., sit, see).
2. Speech and auditory training should be developed together. If a child can't distinguish the difference in speech between two words, he won't be able to distinguish auditorily either.
3. The channels used to develop auditory discrimination are: (a) Suvag I (using earphones and/or the vibrator); (b) Suvag II (adjusted to the child's optimal field of hearing and); (c) the Mini Suvag and (d) the unaided ear.
4. Additionally, it is important that the teacher use appropriate rhythm and intonation. Dr. Carl Asp, (1973: 9) using the Verbotonal Method at the University of Tennessee has stated:

> It is assumed that rhythm and intonation are the carriers for auditory memory. After the child has developed normal intonation and rhythm, it is more likely that he will develop intelligible speech and transfer this perception into the air conduction signal.

Keeping in mind the concepts basic to the Verbotonal Method, the theory and use of auditory training equipment, and the specific guidelines for auditory training work, the Verbotonal teacher can construct an auditory training program. At the Nursery School of The Western Pennsylvania School for the Deaf, children receive both group and individual work on a daily basis. The children have approximately one and one-half hours of group speech and auditory training. A tutor works with each child to further refine and develop the child's capabilities. The group teacher and the individual teacher work together stressing the same concepts and vocabulary.

A beginning student uses the Suvag I with earphones and/or vibrator. When the child can auditorily perceive about 50–80% of the material the teacher has selected, he may begin work on the Suvag II. When the tutor feels that the child is using his hearing fairly effectively in understanding speech, training will be started on the Mini Suvag. The child will be permitted to wear the aid outside the classroom when the tutor is satisfied that the child is using it to maximum efficiency.

Implicit in the Verbotonal Method is the belief that the deaf child can, and should, learn to use his residual hearing as effectively as possible. This ability will help the deaf child to communicate more easily with hearing people in the home, in school, and sometime in the future in the job situation.

Summary

Video-Tape was used as a supplement to the presenter. Many interesting questions—no adverse reaction.

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APPLE TREE—A STRUCTURED APPROACH TO LANGUAGE

Janis Caniglia, Norma Jean Cole, Wyman Howard, Emmylou Krohn and Marcia Rice; teachers, Iowa School for the Deaf, Council Bluffs

I. Introduction

We'd like to introduce you to a new concept of APPLE TREE. This APPLE TREE has no rotten apples, offers you no shady deals, but does offer a new way to branch out in language teaching. APPLE TREE is an acronym. The letters in APPLE TREE spell out "A Patterned Program of Linguistic Expansion through Reinforced Experiences and Evaluations". This language curriculum represents the culmination of a five year cooperative effort of five teachers on the staff at Iowa School for the Deaf. Through work, study, writing and revising, the finished product, APPLE TREE, evolved. The purpose of our presentation today is not to sell you the final package which is in book form, but to sell you on the idea of teaching language through structural linguistics in an organized progressive fashion. This approach has helped us to reduce the multitude of problems which previously confronted us in language teaching, and we think it can help you, too.

As was mentioned, the intent of the APPLE TREE program is to present language through a sequential, spiraling system. This system is based on ten sentence structures which, we feel, provides a foundation for a deaf student's language needs. The words sequence and spiraling have been used. Let's take a moment to clarify these terms. Sequence refers to the logical presentation of sentence structures and language principles. The program begins with a simple sentence structure. Each successive sentence structure is increasingly more difficult. Within each structure, there are certain language principles which are taught. These principles are introduced, one concept at a time. By building from the known to the unknown, it is felt that the students experience a greater degree of success with a minimum degree of frustration. As the students are introduced to more sentence structures, they find that parts of previously learned structures and some of the language principles apply to the one being learned. Through this spiraling approach, the students begin to discover that there is a system in our language.

There are five teaching strategies in the APPLE TREE program. These are comprehension, manipulation, substitution, production and transformations. We have prepared a movie which will explain these processes within the framework of the ten sentence structures. As you view the movie, keep in mind how you could apply the principles of the APPLE TREE program to your class. Perhaps you would not be able to use the fourth step of production because here the students are expected to produce their own language, and this age child may not have the motor skills, maturation or spelling ability needed for writing. With pre-school to age 8, you may be limited to the first three processes: comprehension, which is the teaching of vocabulary, manipulation of the sentence structure and substitution, which not only reinforces the sentence structure, but also expands the students' avenues of expression. These three processes alone are a vital part in the child's acquisition of language. We must provide a visual input first. Too often we demand output before our children have had sufficient time to internalize what we have presented to them.

Beginning as a simple language unit, the ideas behind the APPLE TREE program kept blossoming and now it is best described as an individualized language curriculum which takes a number of years for each child to complete. The APPLE TREE text provides strategies and classroom activities to reinforce the child's learning experiences and to stimulate the teacher's own creative ideas. There will be time for questions and answers at the end of our film. Now, on with the show.

II. Narration for Movie

Through man's need to communicate, he has developed a language of symbols and patterns to express his emotions, experiences and philosophies. These symbols and patterns and their acquisition are transmitted from individual to individual through auditory channels and experiences. A baby born with normal hearing is surrounded by sounds and voices in his environment that he absorbs and internalizes simply because he hears. For him, hearing is as effortless as breathing. But in this simple assimilation, he learns vocabulary, develops language structure, and builds up a storehouse of associative ideas to which he can relate each new experience. He begins with one or two word phrases. As he is exposed to more language and internalizes it to the point where he is able to use what he has heard, his language grows. Through this process, language is developed naturally and he is able to express his experiences, emotions and ideas.

A child born deaf or who has become deaf in early babyhood before oral communication is established, doesn't have this natural ability to acquire language. His environment is wanting—it is wanting the stimulation provided by sound—in particular, the sound of the human voice. Not to hear the spoken language means that a deaf child will never learn this means of communication unless special measures are taken to teach him those simple things the normal hearing child assimilates through hearing. It is not easy for the deaf to learn to communicate in written language. It requires special training. Vocabulary must be supplied in meaningful experiences and language structures provided.

The opportunity to internalize these language structures must be given until they become meaningful, and the child is able to use them in written communication.

A language program was written for hearing impaired children to provide these necessary prerequisites for written communication. The program is called "Apple Tree". "Apple Tree" is an acronym for "A Patterned Program of Linguistic Expansion through Reinforced Experiences and Evaluations". Through the strategies of this program, the child is given experiential vocabulary related to his environment. He is given basic sentence structures which are presented in a sequential order which moves from the known to the unknown and reinforces what is learned by spiraling back to concepts already taught. These procedures give the child the opportunity to internalize language.

The first three structures of the Apple Tree program involve the use of the verb "BE". Written in structural linguistics, these patterns are: $N_1+V_{(BE)}+$Adjective, "The cat is fat"; $N_1+V_{(BE)}+$Where, "The cat is in the barn"; and $N_1+V_{(BE)}+N_1$, "The cat is an animal".

Let's take a closer look at these three structures and discuss their similarities and differences. Once this structure of $N_1+V_{(BE)}+$Adjective (The cat is fat) is established, we are able to go onto the next structure, $N_1+V_{(BE)}+$Where (The cat is in the barn). Notice that the N_1, or subject, (The cat) has already been established. The verb (is) is not new to the children. The only new concept is the where thought (in the barn). The third structure involves the $N_1+V_{(BE)}+N_1$ (The cat is an animal). The children have had practice writing N_1 as the subject and the forms of the verb "BE" (am, is and are). The second N_1 is the new concept to be taught. The final N_1 must agree with the initial N_1 in meaning and number.

Within each structure the program Apple Tree provides teaching strategies for five fundamental steps in language development. These five steps are comprehension, manipulation, substitution, production and transformations. These steps will be discussed within the framework of the first structure, the $N_1+V_{(BE)}+$Adjective pattern (The cat is fat.).

The first step, comprehension, provides experiences that enable the child to build vocabulary. This vocabulary is presented in context so the child can develop a "feel" of how the word is used in sentence structure. Comprehension can be developed at a pre-school level, and it continues through-out the child's school years with increasing complexity. Each teacher should assess the needs and interests of the class and select the amount and type of vocabulary accordingly. Many and varying experiences with each vocabulary word should be provided to enhance the child's learning. The presentation of vocabulary should be continual and repetitious so a deaf child is able to internalize it. Comprehension in the Apple Tree project attempts to provide visual input experiences similar to the auditory experiences hearing children have as they are internalizing vocabulary and sentence structures. Being the foundation of language for this program, the process of comprehension is a vital and necessarily lengthy step. Comprehension is not a step to be taken at the beginning of the year and dropped. It is a continuing process which can be expanded throughout work on each structure. At the beginning of each new sentence structure, vocabulary relevant to that pattern must be provided. In the $N_1+V_{(BE)}+$ Adjective pattern (The cat is fat.), a storehouse of nouns should be established along with associative adjectives and an understanding of the "BE" verb forms.

The next step, manipulation, is a process which gives the child a visual image of the language structure before he is required to write it. Sentences are broken up into their various components and written on word cards. The student's task is to arrange these cards into sentences. By manipulating words or phrases into sentences, the student develops an awareness that certain words fit into specific slots or positions in a sentence, but not in others. Through continual repetition of manipulating sentences in a particular pattern, the student internalizes the structure. As with comprehension, provide ample experiences for this internalization process.

Substitution is a process that lets the child explore the unknown through a known. While keeping all but one segment of a sentence structure stable, the student makes substitutions in the remaining segment. Note that here is the opportunity to stretch the student's vocabulary once the structure is stabilized. Additional reinforcement is gained when substitution is repeated in each segment of the pattern. Here the student begins to realize the similarities between objects. He should be able to categorize what things are round, what things are soft, what things are salty and so forth. The substitution procedure allows the child to feel success and to develop in his proficiency with the language.

Production, the fourth process, is a culminating activity. Once the child comprehends a sentence structure through learning appropriate vocabulary, manipulating the sentence and substituting various parts of the sentence, he then should be ready to write it. Give various stimuli and have the children produce a sentence using the sentence structure learned. The ultimate goal of the program is that the child produce this structure spontaneously.

Up to this point, language development has been confined to simple sentences such as "The apple is juicy.", "The man is tall." and "Miss Smith is pretty." But, in our complex world, the thoughts we want to express are not always that simple. Life is not always positive. The students need to be given the means to express negative feelings through the process of transformation. Transformation is the alteration of a basic sentence structure through addition, rearrangement, substitution or deletion of words. In a negative transformation, there is an addition of the word "not". "The apple is not ripe." "The man is not happy." "I'm not fat!"

Another transformation taught in this first sentence is the question transformation. Often we overlook question work. The students are bombarded daily with our questions, yet we neglect to teach them how to ask questions. Children are naturally curious, but curiosity frequently becomes stifled in a hearing impaired child because he never learns to ask questions.

Examples of the simplest question form in this structure are "What is round?", "Who is pretty?" and "Which persons are tall?". Once the answer has been found, the children use a simple substitution technique to change the question to a statement. The question word becomes the noun phrase and the question mark changes to a period. In the more difficult question transformation of this structure, there is a rearrangement of words. The sentence, "Miss Smith is pretty," becomes the question, "Is Miss Smith pretty?", by changing the verb's position to the front of the question.

In the following pattern of $N_1 + V_{(BE)} +$ Where (The cat is in the barn), we build from what is known, the N_1 position and the form of the verb, "BE," to the unknown, the where thought.

Comprehension in the $N_1 + V_{(BE)} +$ Where structure begins with an understanding of the prepositions to be taught. The number and particular prepositions chosen are dependent on the class needs. Suggested first preposition vocabulary includes "on", "in", "over", "beside" and "near". In this process, don't limit the child's experiences to only one example of each preposition. Use pictures, slides and activities to introduce and solidify these "where" words. Vary all examples to show that each preposition can apply to many situations. The second portion of comprehension in the $N_1 + V_{(BE)} +$ Where structure focuses on the entire "where" phrase. Use phrase work such as "on the table", "under the door", "in the box" to show the relationship between the preposition and its object.

The processes of manipulation and substitution in the $N_1 + V_{(BE)} +$ Where structure can be correlated. The substitution process can be developed from simple activities to the more complex to stabilize the child's understanding of the sentence structure. Vary one segment of the sentence while the other segments remain stable. Next the where phrase can be broken up. By manipulating words within the phrase, the students develop an ability to create correct "where" thoughts. Manipulative activities serve to give the students the time needed to internalize the structure. Once the student is familiar with the position of words in the $N_1 + V_{(BE)} +$ Where structure, similar sentences can then be manipulated.

Then the $N_1 + V_{(BE)} +$ Where structure can be written. Given a controlled stimulus, the students can write a sentence. This basic structure can be expended by using possessive nouns and subject pronouns in the N_1. The $N_1 + V_{(BE)} +$ Adjective structure can be reviewed also. (Lynne is pretty. She is near the window.)

Negatives and question forms are included in the transformation process of this structure. There are three types of questions in the $N_1 + V_{(BE)} +$ Where structure. The most simple question form involves the substitution process. The questions "What is in the corner?" and "Who is by the door?" can easily be answered by changing the question word to the noun phrase and the question mark to a period. The next question form involves the rearrangement of the verb "BE" to the front of the sentence.

An example of this question form is "Is your coat in the locker?". The most difficult question form, "Where is your pencil?", is a progressive developmental step based on the previous question form, "Is your pencil on the floor?". Again, allow enough manipulative experiences so this form can be internalized by the child. Although this is a part of the basic $N_1 + V_{(BE)} +$ Where pattern, transformations can be difficult for the child to grasp.

In the comprehension process of the third structure, $N_1 + V_{(BE)} + N_1$ (The cat is an animal.), no new type of vocabulary is introduced. The students are already familiar with both the N_1 and the verb "BE". Here the task becomes one of noun expansion. This can be done through grouping or classification exercises. The vocabulary chosen depends on class needs, interests and abilities. Perhaps the children could be given more vocabulary to describe themselves and the people around them—student, football player, father, friend, teacher, sister . . . Or the teacher may want to correlate a social studies unit with language and teach the terms country, state, town, occupations and relevant proper noun vocabulary.

Again, the processes of manipulation and substitution can be correlated. The subject N_1 position can be varied while the verb and predicate noun remain stable. This allows for reinforcement in building the pattern, and gives practice in classifying or grouping noun ideas. Substitution in the predicate noun, or second N_1 position provides experiences in developing associated relationships. The students must be provided with a multitude of experiences in order to develop an understanding that the two N_1s must agree in subject and number and that the verb must also be in agreement. These experiences are best given in the manipulative stage. Through manipulation and substitution, the child experiments to find the relationship between the two N_1 positions in number and meaning.

Once the children gain an understanding of the relationship between the N_1s, they are ready to write. Motivation for writing the $N_1+V_{(BE)}+N_1$ form could be a short autobiography of the child, or the students can write biographies of other members of the class. Other stimuli could be lists of teachers' names, family members or famous people. Review work of the $N_1+V_{(BE)}+$ Adjective pattern (The cat is fat.) could be incorporated. Correlation of other subject areas gives opportunity to use this pattern.

The question transformations in the $N_1+V_{(BE)}+N_1$ pattern are formed the same as in the previous patterns. The question words Who, What or Which are used in the N_1 position through substitution techniques. The more difficult question form involves the rearrangement of the verb to the beginning of the sentence. "Mr. Devine is a father." becomes "Is Mr. Devine a father?". The negative transformation is familiar to the students, also. They are aware that the NOT word is inserted into the structure following the BE verb.

These are the first three structures in the Apple Tree program. They are interrelated through the use of the BE verb. The patterns build and spiral in a sequential form and provide a foundation for the following structures: N_1+V, The cat is sleeping.; N_1+V+N_2, The cat chased the mouse; and $N_1+V+N_3+N_2$, The cat gave me the mouse.

In the first structure, the students are familiar with the N_1 position. The verb is the new element. New verbs are introduced through the modal "can". With the modal "can", the verb following it remains in its simple form. (Mary can jump.) Further, the word "can" is not altered by any endings in the statement or in the question. (Can Jim jump?)

Once some verbs are learned and used with the modal "can", the two tenses, present progressive and past, are introduced. The present progressive is presented first because it uses the verb BE as an auxiliary. The forms of the BE verb have already been taught.

This structure of N_1+V is then expanded by the addition of the where phrase (The cat is sleeping in the barn.). The where phrase vocabulary and structure have been presented with the BE verb.

Now these phrases can be associated with the present progressive and past tenses. After a brief review of familiar phrases, prepositional vocabulary can be expanded.

Another section in the N_1+V+Where structure involves the present tense of the verb "live". Here animals and their habitats as well as people and their dwellings are taught using this structure, giving the students their first exposure to the present tense. (Polar bears *live* in Alaska. Jim *lives* in an apartment.)

The next addition of the basic N_1+V structure is the when phrase. First vocabulary is presented for past time phrases by relating them to a calendar and the children's activities. Then N_1+V+Where$+$When sentences are formed. (The cat slept in the barn last night.) The relationship between the time phrase and its corresponding verb tense should be stressed in each section. The present progressive tense form is reviewed, but is now presented with future time phrases. (Mom and Dad are coming to school tomorrow.) After these time phrases have been used with the present progressive tense in the N_1+V+Where$+$When sentences, the future tense in introduced. (Mom and Dad will come to school tomorrow.) Apple Tree is careful to introduce only one new concept at a time. The students learn something new through an already established framework. The present tense is reviewed while habitual time phrases are introduced. (We go to school everyday.) A lot of background work will be needed to show the students that the habitual time phrases and the corresponding present tense are used to indicate something that happens often, sometimes or never. The relationship between all the verb tenses and their corresponding time phrases are reviewed before leaving this structure.

The next basic structure is the N_1+V+N_2 pattern. (The cat chased the mouse.) The students are familiar with the N_1 and have been exposed to four verb tenses. The new idea to be presented in this structure is the N_2 or direct object. The students learn that unlike the second noun in the $N_1+V_{(BE)}+N_1$ structure (*The cat* is an *animal.*), the N^2 does not have to agree in subject and number (*I* have two *cats.*) Some additional concepts are included in the N_1+V+N_2 structure. These are noncount or mass nouns, "John chewed *gum.*" and partitives, "John chewed *a stick of gum.*"; the helping for, "Mary washed the dishes *for Mother*"; verb thoughts, "I *like to play* baseball."; and verb idioms, "Mr. Jones *talked to* the class.".

The N_1+V+N_2 structure is expanded by the addition of a where phrase. (John chewed gum in school.) Since the students have written where phrases on two separate occasions, this section was included for review of the phrases and to show what position the where phrase takes in a N_1+V+N_2 sentence.

The time phrases are reviewed next when the N_1+V+N_2 structure is expanded again by the addition of when. (John chewed gum in school yesterday.) The importance of this section is to show the position the when takes in this structure. This is also an additional reinforcement of verb tense and time relationship.

The final basic structure is the $N_1+V+N_3+N_2$. (The cat gave me a mouse.) The unknown element is the N_3 or indirect object. Certain verbs which take the indirect object are presented. The underlying structure of this pattern is N_1+V+N_2 plus a prepositional phrase using a "for" or "to". (My friend gave a present to me.) The N_3 position is formed by the transferral of the "to" or "for" phrase to the position following the verb. (My friend gave me a present.) With manipulation and contrast of these two structures, a comprehension of the underlying structure is gained. This structure can also be expanded by the addition of a where phrase (Mother sent me a box at school), a when phrase (Mother sent me a box last week) or both (Mother sent me a box at school last week).

This is the basic framework of the Apple Tree program. Unfortunately the time needed to teach Apple Tree does not correspond with the length of this film. Do not expect to complete the program within one school year. The time needed to teach one class all the material included in Apple Tree is dependent on the class' maturation and ability. Apple Tree provides the teacher with strategies and activities for teaching comprehension, manipulation, substitution, production and transformations in a progressive sequence through these ten basic structures. Tests are provided for pre-test and post-test situations so the students' language abilities can be assessed at the beginning of the school year and at the end. In addition to this test, evaluations for each new concept are written into the program so the teacher using Apple Tree is constantly evaluating the progress of each student.

End quote: "Not for a tower of Babel, but for a tower of understanding; this is the reason for all the work. Let the task be pleasant for the better learning of it."

AUDITORY RESEARCH AT GALLAUDET COLLEGE

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It probably is safe to say that we all have observed that the child with a hearing loss doesn't understand speech as well as the child with normal hearing does. Each time that we have contact with a hearing-impaired child, we learn a little bit more about his hearing problem. You can evaluate a child's auditory reception in a variety of ways. Many of you test his hearing informally in the classroom each day. You speak to the child, give him instructions . . . and he does or doesn't understand what you say. You may evaluate the child in a bit more structured situation in the classroom when you select certain sentences or words for auditory training, and you observe day after day whether he can or cannot discriminate these items. Some of us evaluate speech reception in another way—we present lists of words to the child and see how many of them he can repeat. This gives a score, like 20% or 70%, that gives an estimate of the child's ability to recognize words. Some persons even study the kinds of errors the child makes—the examiner says the word "boy", the child thinks he said the word "toy". What does that error tell us about the child's hearing and his particular discrimination problem?

Each of these methods of evaluation provide some information about the ability to recognize or discriminate speech. However, none of them is designed to determine why errors in discrimination occur. They give an estimate of ability and they may indicate the types of errors which characterize a particular child's loss, but they don't show why the child makes such errors and why he does not discriminate certain speech sounds.

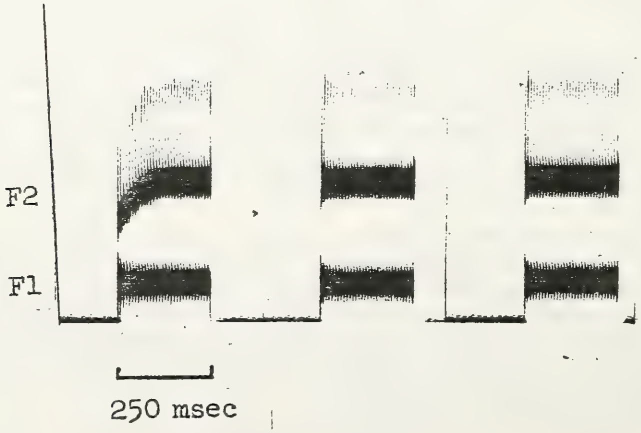
Why do children with sensorineural loss have reduced discrimination ability? What is it about sensorineural damage that "scrambles" speech? Are certain types of speech information irrevocably lost when sensorineural damage occurs? The purpose of our research at Gallaudet is to provide some answers to some of these questions. We hope to apply this information toward the development of more effective programs of auditory training and aural rehabilitation.

For the past seven years, we have been studying the way in which persons with sensorineural loss can discriminate various types of speech information. Our work has concentrated on vowels and some of the consonant information that occurs in vowel formants. Specifically, we have been studying discrimination of formant frequency transitions that occur when consonants and vowels are coarticulated. These transitions are thought to be important cues for the discrimination of certain speech sounds—such as [b, d, g, p, t, k]. The study we are reporting today was designed to determine if persons with sensorineural loss can discriminate the types of frequency transitions that occur in speech.

We used 24 college-age Gallaudet students as listeners; 13 had flat audiograms, 11 had sloping audiograms. The students were paid to come in for two testing sessions in the research lab each week for three months. They were tested individually. At the beginning of the test hour the student sets a comfortable listening level for our test sounds, using earphones. The vowel formants and formant transitions are produced by a vowel synthesizer and the presentation of the sounds and recording of the responses are done automatically. The purpose of the tests was to determine the smallest F2 transition that each student could discriminate.

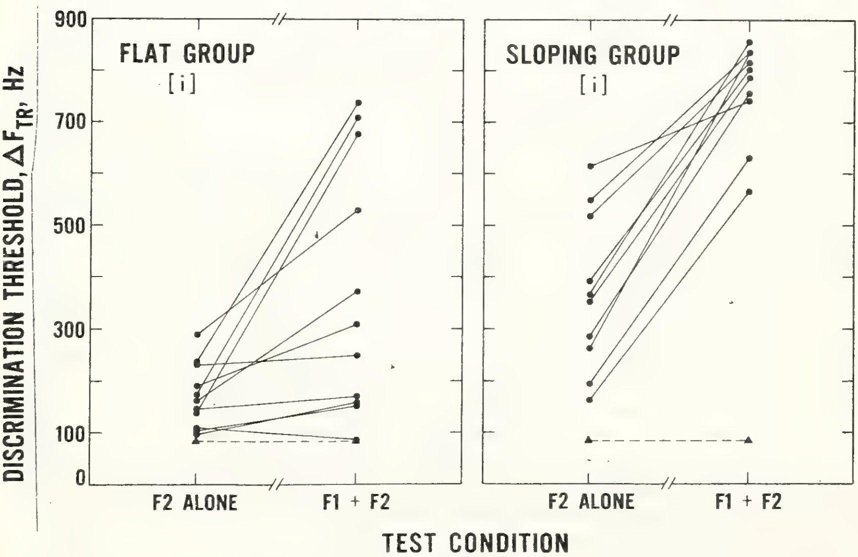
Figure 1 shows an example of the synthesized vowel formants that we used in our tests. The low-frequency formant (F1) has no transition, it is constant in frequency. The first of the three stimuli in Fig. 1 has a frequency transition in the higher-frequency formant (F2). In these tests, the student was asked to choose which of three stimuli had a frequency transition in F2. The size of the transition was varied until we could determine the smallest transition that could be discriminated; this was called the discrimination threshold.

FIGURE 1



The student was given two groups of tests. In one of them, F2 was presented alone and the student discriminated the transition at the beginning of F2. In the second group of tests, both F1 and F2 were presented at the same time, as they occur in speech. The student still tried to find the F2 transition but it was more difficult because it was partially "hidden" in the more-intense, low-frequency first formant. The "F2 alone" tests measure the student's ability to discriminate frequency transitions. The "F1 plus F2" tests measure the ability to discriminate transitions when they occur in a speech-like environment. In these tests, the formant frequencies approximated those of the vowel [i]. Fig. 2 shows the thresholds for the students when F2 was presented alone and when both F1 and F2 were presented at the same time.

Figure 2



First look at the "F2 alone" thresholds. Many of the students have essentially normal discrimation of F2 transitions—some of them have flat audiograms and some have sloping audiograms. These data indicate that 1) sensorineural damage does not destroy the ability to discriminate frequency cues and 2) persons with flat audiograms and persons with sloping audiograms can have essentially the same discrimination ability.

Now consider the "F1 plus F2" thresholds. Recall that in this condition, the student is still trying to find the F2 transition, but now a low-frequency first formant is present, to complicate the listening task. The stimuli used in this condition are a closer approximation of speech than are those of the "F2 alone" condition. Look at the large range of thresholds in the flat group. Some students' discrimination does not change when F1 is added, but other students show very poor discrimination. The range of thresholds is not as large in the sloping group and in all cases discrimination becomes poorer when F1 is added. Note the similarities between some of the students in the flat and sloping groups.

What do the "F1 plus F2" data indicate? For one thing, they support the conclusion from the "F2 alone" data—persons with flat audiograms and persons with sloping audiograms can have essentially the same discrimination ability. But perhaps more important than that, the data indicate that the low-frequency part of a vowel can interfere with discrimination of frequency transitions which occur in the higher frequency regions. This means that even though some persons can discriminate small frequency transitions when they occur in isolation, they are unable to make these discriminations when the transitions occur in a more speech-like environment, i.e., with F1 present.

The patterns of learning for these students were quite varied. Some students showed good discrimination for both test conditions immediately. Others had poor discrimination initially but improved after only 4 or 5 listening sessions. Other students showed poor discrimination for several weeks but improved quite suddenly in the middle of the semester. And another group of students fluctuated greatly from day to day and never did show any consistent improvement in their discrimination ability.

What do our test results mean in terms of the students' communication? The data suggest that if we could reduce the amount of low-frequency sound that some children hear, their discrimination of speech information in the higher frequencies might improve. (We have shown in tests subsequent to these that this does in fact occur.) The data also suggest that some children, particularly those with useful hearing at about 1KHz or above, should not be fitted with hearing aids that present a greater-than-normal amount of low-frequency sound; these are aids with an extended low-frequency response or aids that emphasize the low frequencies. While these aids might improve a child's awareness of sounds in the environment, they might result in poorer speech discrimination that would be obtained with the more usual aid which partially suppressed low-frequency sound.

Is there any practical application for the classroom teacher? Probably the most important is that the nature of a child's discrimination problem cannot be determined on the basis of the audiogram alone. Persons with flat losses and persons with sloping losses can have similar discrimination abilities and persons with essentially the same audiograms can have markedly different discrimination. Our data also shows that some students' discrimination improves over several months' time and that with repeated practice, they can discriminate sound cues which they could not discriminate originally. We plan to continue our investigation of factors which affect the discrimination of persons with sensorineural loss. We hope that the data from these studies will provide a basis for the development of more effective programs of aural rehabilitation.

AUDIOLOGICAL MANAGEMENT OF INFANTS—BIRTH TO 3 YEARS

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Early detection and treatment for the hearing impaired child is widely accepted in the field of audiology and education of the deaf as essential to successful language and education habilitation. In more recent years techniques for early detection of deafness have been emerging from programs of neonatal screening established in many hospitals throughout the country. The percentage of deaf newborn babies found has been very low but the information that testing can be done at an early age and treatment such as hearing aids and family guidance is available has been spread to pediatricians and other medical personnel involved with management of young children. For many years mothers have questioned their babies' response to sound only to be told by their doctor to wait.

It is a well accepted and known fact that the first year of life is essential to the development of speech and language in any child. This same fact is perhaps more important to the child with impaired hearing. A baby's early communication is not necessarily involved with words. He needs physical care and comfort. He also needs love and warmth and attention. Without these he cannot thrive. But he is content to receive it in many wordless ways; warm arms to hold him close; affectionate faces to smile on him; little games that involve brightness and movement to catch and hold his attention. The world is good for a baby and he is, for a little while, quite unaware that all around him communication travels in a dimension quite unknown to him.

A baby's responses are quite deceptively normal—he coos and gurgles and crows quite spontaneously, with or without hearing. Every waking moment he is in motion, exercising his arms, his legs, his vocal cords, everything that will move and respond. This is his way of helping himself grow. But the day comes when certain responses are noticeably lacking in the child with impaired hearing. Often the discovery of reduced hearing is made by accident—the father comes in from work, calls to the child and gets no response until the child sees him. The mother notices her baby gives no evidence of her presence in his room until she gets in his line of vision. Such signs as these need to be recognized and help should be sought. Quite often it is not until the child fails to develop speech that the parents begin to worry. If there is any question in the minds of parents concerning the hearing of any child at any age, it is simple insurance to find out by seeking professional help. Then if the fears were groundless, the relief and reassurance of knowing are well worth the time and money spent in learning this fact. However, if the fears and suspicions were true, the earlier you find out and the sooner you begin his training, the better the child's chances are for learning to use his hearing and the sooner his learning can be stimulated in the correct way. One thing is certain: *A child does not "outgrow" a hearing loss.*

We will assume in our discussion 4 basic considerations for the management of the infant with hearing impairment: early identification, early amplification (binaural amplification), early training, and appropriate schooling. The need for better methods of hearing screening on a mass scale is still present and hopefully in the process of definition. The newborn screening program did encourage many of us to act; the reality of infant responses in the earlier stages of life, the lack of equipment for testing, and the mechanics of mass screening programs were realized. We, in Nashville, have initiated a screening program through the Public Health Department Well Baby Clinics where the children from 8 months to 4 years are routinely tested for hearing by trained volunteers and public health nurses. The pilot project did reveal that this method of screening is effective and out of 385 children tested one deaf child was found, 10 children were found with conductive problems and approximately 6 children did not come for the follow-up testing. We hope to expand this program and after more trial testing be able to share it with others across the country. But early detection can be accomplished; babies can be accurately tested for hearing and help can be begun as soon as the hearing levels are established. The types of tests available for the younger children are not as definitive as with older children but with good sound field audiometric techniques, with consistent responses to sound stimuli, then go ahead and begin treatment. There are many who feel that amplification cannot be introduced until you obtain complete hearing test results on the child. Knowing that due to many factors a child is not ready for conditioned play audiometry until approximately 3 years of age why waste valuable and critical time for speech and language development?

If your test results by sound field audiometry indicate awarenesses to live voice, music, warbled tones, in the moderately severe or severe to profound range, why wait? The longer the child goes without sound, the harder it is going to be for him to learn to use sound appropriately. The younger the child begins his hearing aid use, the better are his chances for utilizing whatever residual hearing is there. If a child is identified as hearing impaired at 10 months, then the lost time for sound is relatively small. If he is 3 years old, the time is great. The earlier you begin, the more likely the child will be to functionally use his hearing. No matter how good we as audiologists are at testing children, if we cannot help the parents and family to understand the extent and effect of the hearing loss, to have available hearing aids for beginning adjustment to amplification, to have training programs to help guide these parents, then we have failed. What good does it do the parent to have someone confirm their worst fears if we can not offer guidance for them? The parents are the most critical factors in a child's life. They are the ones who must day to day deal with the child and they are the primary source of learning during the most critical period of the child's life for speech and language. The parents need not only guidance in understanding the hearing loss, beginning adjustment to hearing aid use, and early techniques for training but they need someone to listen to their feelings, their questions, their guilt, and their concerns. It takes a whole new breed of professionals to work effectively with the deaf infant. We cannot expect audiologists and teachers of the deaf to simply lower the traditional methods taught in our training programs to meet the many new and different needs of this group of people.

Early amplification has been questioned by many of my colleagues. One must believe in and understand the normal development of the hearing mechanism, must realize the necessity of sound being present prior to use of such, to proceed with hearing aids with somewhat limited information. As I work with these children who are identified very early, did receive hearing aids very early, did receive good parent training early, I am more convinced every day that we can and we are producing a different kind of deaf child than we have in the past. We do believe very strongly in binaural hearing aids, not a "y" cord but two good hearing aids that are working properly and are properly placed for the best benefit that they can obtain. As many of you may know from the literature, formal test results with two hearing aids are not significantly different from one good aid; but, the subjective improvement noticed by all concerned with the introduction of the second hearing aid makes it worthwhile. When we accept nature and the fact that we have two ears, why should these deaf children not have the chance for binaural hearing that we have? By placing the aids on the shoulder level you are more naturally creating a sound source more like his own ears in terms of location; you give him the chance of being able to localize sound that the use of one aid can never produce. You also give him the chance to hear his own voice. Thusly give the child every opportunity to maximize the useable hearing he has. Once we have achieved the early diagnosis and the early fitting of hearing aids, we must offer a training program for the child and his parents.

Early identification of deafness and early amplification with appropriate binaural hearing aids is only the beginning in the long term therapeutic-academic management of the young deaf child. The realization by parents that their child is deaf is often very devastating. Frequently they feel guilt, disbelief, shock or apathy. These reactions are very understandable and need to be dealt with by professionals. The family needs to realize that all is not lost and that their deaf child can live a happy, resourceful, full life.

Every child has to face problems involved in his adjustment to the world as a whole, to the neighborhood in which he lives, and to the home into which he was born. The deaf child must make these same adjustments, as well as many others, contingent upon his deafness. Yet, the home and the people in it provide the greatest influence on the deaf child's progress in his society. Since teaching of a hearing impaired child is a 24 hour job, it seems obvious that the parents are the key agents in the development of a young hearing impaired child. It is through them that all experiences are shaped, understood and interpreted. The teaching of language is, indeed a total experience, asking both parents to become unique teaching parents.

Realizing that parents and the home have a great impact on the progress of a young deaf child, Home Demonstration Programs utilizing individual management of deaf children and his parents with emphasis on the role of the parents are becoming more prevalent in the United States. In the very early period of life, (one-two-three years) formal educational techniques are not possible or feasible due to the general maturational level of the child. Thus under the guiding influence of qualified personnel, the parents learn techniques and procedures necessary for them to become language models for their hearing impaired child.

The teaching is done in a home setting, surroundings common place for the child and parents. Specifically, the child and parents are involved in demonstrations and practice of activities designed to enhance the development of language skills as they occur in the home. Activities such as; eating, dressing, washing, playing all take on new goals—goals demonstrative and imitative in verbal behavior. Each activity becomes language oriented, teaching the child something about the maze of language. The family is exposed to several types of meetings, individual meetings, involving parents, child and their respective teacher; group meetings, involving all parents, teachers and audiologists in the program and father's meetings, involving only the fathers in the program. These meetings provide numerous opportunities for the families, jointly in a group or individually in a session to air their feelings, frustrations, anxieties and pleasures. It also provides opportunities for personnel to disseminate and review information.

Concurrently with the management of the family in the home demonstration program, it is necessary for the child to receive adequate and consistent audiological management. Not only do the parents become sophisticated in the techniques necessary for correct language modeling for their deaf child but they become knowledgeable about audiological functioning, interpretation of hearing test results, and detection of defects in their child's personal hearing aids by daily monitoring the parts and performance of the aids. The education of parents of deaf children is an ongoing process and must not stop when a child moves from a parent oriented program into a child oriented program. Parental guidance and counselling must be an integral part of any program, regardless of the age of the child. Whether the child is in the mainstream of regular education, in self-contained classrooms for the deaf, or in private or state residential schools for the deaf, parents will always have questions that need answering, concerns that need alleviating, and problems that need listening. We, as professionals, must be prepared to meet these needs. It is only through a cooperative effort by parents, audiologists, teachers and medical personnel will a deaf child realize his maximum potential.

CAREER DEVELOPMENT IN THE EDUCATION OF THE DEAF—A PROGRAM MODEL—(Panel)

Ralph L. Hoag, Ed. D., superintendent, Rochester School for the Deaf, New York; Harold L. Munson, Ph. D., professor and chairman, Department of Guidance and Student Personnel, University of Rochester, New York, and William J. Howard, M. Ed., demonstration supervisor, Career Development Project, University of Rochester, New York

Introduction

Attention to the career development of the deaf has been minimal in schools for the deaf throughout the nation. Most of the effort has centered around educational planning of job placement at critical choice points in the educative process. The ideas contained in the following papers have been formulated as a part of a project supported by CREED (Cooperative Research Endeavors in the Education of the Deaf), consisting of twelve schools for the deaf in New York State, as funded under ESEA Title I (Public Law 89–313). The project, Career Development in the Education of the Deaf, was designed to explore newer concepts and practices in vocational development as they apply to the education of the deaf. The project involves three schools. The sponsoring institution, the Rochester School for the Deaf, serves as the experimental location where new materials are being created and different classroom methods or strategies are being generated. The other two institutions, St. Mary's

School for the Deaf, Buffalo, N.Y., and the New York State School for the Deaf, Rome, N.Y., are acting as pilot locations where these materials and strategies are being field tested and refined.

The study is being conducted in three phases over a three-year period. Phase I, which was conducted in 1971–72, focused on the exploration and modification of vocational gaming techniques as these had been developed in the Career Insights and Self-Awareness Gaming program at the University of Rochester.

During this period the parameters of a program model were explored and the problems to be surmounted were investigated.

Phase II, which is currently in progress, has involved the further refinement of vocational gaming techniques and the introduction of other potentially promising career development materials. Administrative considerations and priorities have been examined. A survey of career opportunities for the deaf has been conducted. Communication problems as they are involved in vocational learning-maturation and as they are experienced in the world of work are being carefully studied. The broad outline of a program model has been established and the materials and strategies for its implementation are beginning to emerge.

Phase III will be a period for solidifying a viable program. The final year of the project will emphasize the refinement of the model and the strategies to be employed. While we do not anticipate that all of the materials which can eventually be utilized successfully in career development activities will be developed, we do not expect that the nature and composition of effective instructional tools will be sufficiently identified so that all schools for the deaf may proceed in providing a program of more effective vocational learning-maturation exposures and experiences.

EDUCATIONAL STRATEGIES AND ADMINISTRATIVE CONSIDERATIONS FOR AN EFFECTIVE CAREER DEVELOPMENT PROGRAM

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This paper will be concerned primarily with educational strategies and administrative considerations that have to be developed in order to provide a real operationally effective career development program for students in our schools for the deaf.

The activities proposed here are quite different from those we have been accustomed to and see going on in our schools. The kind of program suggested attacks the problem of education for our children in ways that are entirely different from what is most generally practiced. Most teachers in our schools tend to focus their efforts on directive informational giving methods for teaching subject matter. We teach language, reading, mathematics, social subjects and other subjects without saying much about why or what for. Very often we expect rote learned answers to be made by children in response to carefully taught stimuli. We tend to repeat and repeat and repeat. We reinforce successful responses and at the same time press harder on mistakes to a high level of frustration for both teacher and student.

When children are older, but not necessarily wiser, we traditionally expose them to a series of crafts, vocational skills, and activities often identified as pre-vocational exploratory programs. The limits, however, are governed by what the individual school programs have to offer. We attempt to analyze a child's skills and make judgments about what he can or cannot do. Then we proceed to inform him about himself whether or not he wants to know, or is even interested at this point in his life. Such limited exposures to vocational experiences rarely involve choice or selection on the part of the student.

When the child moves up our educational ladder he is confronted with the choice of a vocational specialty. We discuss with him what he wants but often in the end we tell him what vocational activity he should take. The program again is limited to what there is available at that school. Vocational aspiration levels of deaf children are either non-existent or they are very vague and often inappropriate. Our traditional style of education is at fault for this.

The student ready for graduation has several options open to him; college, post-secondary vocational or technical training, or a job. Those who go to college often do so without knowing what for and what direction they should take. Those who take further vocational or technical training enter programs without a realistic knowledge of their capabilities, interests and skill potentials. Those who go to work often experience early job failure. Others stay on the first job they find (or is given as is often the case) and stay with it diligently for fear of losing it even though they may be capable of a better one if given educational and training opportunity.

The deaf now have a whole new world ahead of them. Opportunities for education and employment are widely diversified and much more numerous. Teachers and educators in our schools, however, seem to be quite ill prepared to inform or guide our children early enough to know, appreciate, or understand all these wonderful options.

We are discovering that teachers are finding it difficult to move away from traditional methods of teaching. The tenacity with which some who adhere religiously to traditional procedures is unbelievable. The strong traditionalist sees the activities of our new approach to vocational development concepts as playing and wasting time. They find it very difficult to change the way they have become accustomed to managing an educational curriculum for children in their classes.

Dr. Munson in his publication on Elementary School Guidance describes vocational development as a learning maturational process, (Munson, 1970). In his text he identifies some of the psychological aspects of vocational development very clearly. Some of these are briefly summarized as follows:

> Vocational Development is a lifetime process.
>
> Vocational Development involves all internal and external forces acting on the individual.
>
> Vocational Development involves decision making over time.
>
> Vocational Development is experimental.
>
> Vocational Development is progressive and involves compromise in achieving self-identity.

The way we have been educating children rarely attends to or places any focus on these processes. Self-awareness for the student is frequently achieved by chance, often late or even too late for effective use in shaping career objectives. We (administrators, supervisors, and teachers) need to develop strategies in our programs that will assure involvement of the student in the process of his vocational development and we need to do this earlier in their careers.

I am becoming more and more convinced that the enlightened and concerned individuals among us need to become much more outspoken as critics of the general educational system in our field. People are not really very well prepared to understand or appreciate the problems our children have and how to appropriately respond educationally to their needs. We who administer programs are often not very well prepared to give the kind of leadership necessary for developing effective learning programs.

Our students have traditionally had difficulty with such skills as comparing, summarizing, classifying, interpreting, criticizing, hypothesizing, imagining, and observing. I submit that in our methods of teaching we have unconsciously avoided these *difficult to teach* skills. There is a definite need to change our teaching behavior and give attention to these essential thinking operations.

Our style has been primarily to teach children to *perform* in response to the signals and stimuli we create to evoke the appropriate response. What we really should be teaching our children is how to think, how to process information, and how to make decisions that involve them as people now and in the future.

Our educational system has been a directive process. We tend to tell the child who he is, what he can do, and where he can go. We rarely give him the opportunity to discover these things for himself.

A child cannot possibly be exposed to all the information he will need in life—yet our teachers push themselves unmercifully in an attempt to achieve this end. Most teachers resist devoting time to teaching one how to locate or find information, how to apply and process information in order to make choices, or how to use new information to make new decisions.

Educational programs need to be reorganized and designed to provide each child with opportunities for self-development and self-maturation through experimentation and exploration processes. We are all aware, I am sure, that the making of decisions suddenly becomes a real way of life for the individual after we emancipate him from our highly structured and directively organized educational programs. Yet, he has to make these very crucial decisions without having had much experience for doing so when in school.

In order to accomplish real changes, we need to get at the basic preparation programs for teachers in our colleges and universities. We need to find enlightened educational supervisors who can effectively deal with shaping educational strategies in on-going programs. And, we need to make strong administrative educational commitment to the philosophy that children can do a better job of learning how to think.

A time-worn but rather universally accepted phrase included in most written or published school program statements of purposes and objectives often reads something like this:

> Our educational program is designed to prepare the deaf child for independent citizenship, enabling him to become a successful, contributing, participating member of society.

Rarely, however, do these documents go on with any detailed directions for achieving this important and rather universally accepted goal.

Our commitment and all of our energy in education should be addressed to helping the child achieve pleasurably to his own satisfaction his potential in society as a thinking individual with a realistic awareness of his personal, psychological, and vocational strengths and weaknesses and who can effectively make sound decisions about himself, the role he can play in society, and what he could or should aim for vocationally. He should be able to clearly see the way and means for achieving that objective. All of this should be accomplished through maturational enlightenment in terms of the child's own self-image and self-identity.

I see also, in the project that we are involved with, a way of changing teacher behavior. The program is intentionally designed as a way of leading and shaping educational and vocational development through self-awareness and discovery processes.

Teachers argue that the deaf cannot handle the abstract concepts involved nor can they understand the terminology used in the activities offered in this project. They tend to react negatively to these activities initially because of limits we have traditionally thought deafness imposes on learning. They say that our children can only deal with visual and concrete aspects of learning.

This project is demonstrating that this is not true. Abstract concepts can be handled by deaf children very effectively. This is true of children with limited ability as well. These activities when appropriately introduced and used have had a stimulating effect on children. Because of the focus on self-awareness, these activities seem to generate and motivate a renewed interest in vocabulary, language, and communication.

Deaf children, like all other children, need to see a reason for learning. We need to respond to this and make use of every technique we can find or devise to capitalize on this.

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CAREER DEVELOPMENT IN THE EDUCATION OF THE DEAF: A PROGRAM RATIONALE

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"What are you going to be when you grow up?" This question, so frequenctly pointed to the young, speaks to career development activities as they have been traditionally provided. Our focus has been on *the* choice of *an* occupation. Our efforts to help have been mainly *informational*—that is, providing occupational information. Our process has consisted mainly of helping individuals to match their talents (commonly limited to one's abilities and interests) with the available tasks (usually restricted to those occupations with which the individual is familiar). This extremely narrow approach to vocational development confined in time to the late adolescent and young adult years is no longer tenable.

A Theoretical Rationale

Most career development activities for the deaf are sporadic and incidental consisting of a career unit here and there, an occasional guest speaker, a number of mostly out-of-date monographs written for hearing people, and a field trip to a place of business now and then. Career exposures are limited to the duties of a job. The social and psychological factors of job performance are rarely treated. The all important demands of on-the-job communication and the problems that the deaf worker will encounter are commonly ignored. While it is important to recognize and applaud any attempts to deal with this vast void in the education of the deaf child, we cannot turn from our need to attend to the career education of the deaf in a more ongoing and planned manner.

Research in vocational psychology suggests strongly that career evolvement is a developmental, dynamic, comprehensive process that extends over a long period of time—perhaps a lifetime. The many factors and considerations that go into career evolvement have been identified. We know that it is as complicated and as complex as any other facet of human growth. It involves both the cognitive and affective domains of human learning and human maturation. As a vital aspect of human development we can think of the process as vocational learning-maturation.

What one *knows* and how one *thinks* and *feels* are all important in living and working. Programs geared to the process of vocational learning-maturation are designed to stretch one's knowing and thinking—both about himself and his world. In this sense, individuals are *learning*. As an individual gains in his understanding of "self," he is growing and *maturing*.

Vocational learning relies on *exposures* to many different areas of knowledge. It encompasses far more than expanding one's occupational horizons by providing information about educational or occupational opportunities. It begins with making the individual *aware* of both his "self" and his environment. It means helping him to learn who he is and how he behaves. The content of his vocational learning flows from his study of work, work roles and work relationships. He needs ideas and concepts that will enhance his ability to understand the present world in which he lives and works. He needs to learn how to evaluate where he is coming from as well as where or what he is going to.

Vocational maturation emerges with *experience*. A person needs opportunities to test who he is and how he functions. For the young person, the source of his experiencing lies in his school, his home and his community. Since he is increasingly excluded from experiences in the labor market, the fountainhead of his maturation lies in whatever significance and meaning he can garner from his day-to-day activities. This imposes a great responsibility and commitment for education to accommodate the process of vocational maturation. *Real* work experiences are possible in the educative process. We have to learn how to make better application of the opportunities which are afforded young people to test themselves in their regular classroom endeavors every day. This necessitates reconstructing our traditional instructional strategies so that class experiences can provide for maturational elements as well as subject matter learning.

The vocational learning-maturation process rests on teaching an individual how to think. He must be able to organize and utilize all that he knows and feels. Helping the individual to learn how to process information is a way of providing him with the tools for decision-making and problem-solving. Learning how to think—how to compare, critique, imagine, summarize, interpret, classify, observe and hypothesize—necessitates making choices and decisions. In examining their own thinking processes, individuals learn about the judgments that go into their decisions and choices.

Program Channels

There are four basic channels that feed the vocational learning-maturation process: (1) the self, (2) the conceptual, (3) the informational and (4) the experiential. If the vocational learning-maturation process is to be properly nourished, a program must provide for *continuing input* utilizing all four channels. Each of these channels can be broadly characterized.

The self channel.—Self exposures focus on the individual and his "being" and deal with the many concepts of self that make up one's self-identity. Exposures that contribute to "who am I?" offer the individual an opportunity to explore and assess not only his abilities and interests but his values, needs, life goals, motivations, aspirations, physical capacities, behaviors and personal traits. Continuing self appraisals help the individual in distinguishing his uniqueness and in differentiating among his concepts of self. Clear concepts of self help the individual to use his experiences in discovering distortions in his view of self and in examining any discrepancies between the way he believes he performs and the way he does, in fact, perform. Since the development of the self concept (the generalized "I") is dependent, in part, on the reactions and evaluations of others, the disadvantagement of the deaf child is obvious. Many communications are unheard or misunderstood. Hearing folks, unable to communicate with him, often tend to be insensitive to his presence or to ignore him. He is repeatedly denied the many human interactions that become the source of clear and positive self concepts. In the education of the deaf, therefore, provisions for the self channel of vocational learning-maturation have particular significance.

The conceptual channel.—The conceptual channel is concerned with introducing concepts of work, work roles and work functions. It provides exposures that assist the deaf learner in translating these concepts to his own life style as he formulates his attitudes toward work, establishes his work values, investigates his work motivations and assesses his work satisfactions. Concepts of work develop over a period of time. They are formed as the learner is able to master and manipulate the abstract information which is available to him. He needs learning episodes that provide him with opportunities to deal with abstract ideas and thoughts and to develop mental impressions. Language serves an important function in conceptual learning and the deaf learner needs to master the vocabulary of work in order to organize and synthesize his learning. Words must have meaning lest they become sources of "empty verbalism" whereby students parrot definitions and ideas which they do not understand and cannot use. As the deaf learner is able to comprehend concepts of work, he is able to manipulate them in making his own discriminations and generalizations. They become useful to him as he integrates them with other inputs for decision making or problem solving.

The informational channel.—Informational exposures provide for input of a factual nature and deal basically with expanding the deaf student's knowledge about specific jobs in the world of work. All students need information about occupational environments and opportunities. Deaf students not only need to know about the duties and qualifications of different jobs but, as importantly, they need to know a great deal about the communication demands of these jobs. They need very specific information about the nature of these demands and the level of different communicative skills required. They need information about other on-the-job problems which the deaf worker can expect to encounter. All their specialized informational needs mandate a new look at the standard sources of information and the traditional techniques of implementation we have heretofore employed.

The experiential channel.—Experiential exposures permit the deaf learner to test his feelings about and behaviors in work roles and work role relationships. Through experiential episodes, the individual clarifies his feelings about work and work functions and enhances his understanding of the interpersonal aspects of job performance. This can be accomplished in real or life-like (simulated) situations as a part of classroom or other school tasks. In the past we have tended to think of work experience only in terms of real on-the-job opportunities excusing the resultant vocational learning-maturation shortcomings on the grounds that labor legislation increasingly excludes the young from these exposures, that employers will not cooperate in developing viable programs, or that increasing unemployment has limited part-time and summer work opportunities. Although these conditions may exist, there are other strategies for involving the deaf student in the actual dynamics of work. School involves data, people, and things; and many day-to-day classroom tasks involve work activities and communication demands as real as those encountered in many work situations. The work functions inherent in the demands of school, the pressure of completing these tasks, and the conditions in which these tasks must be accomplished can be converted into meaningful experiential learning.

These four program channels each make their own discrete contribution to the vocational learning-maturation process. Our programs must insure that each one is operating at maximum capacity. At the same time, we must be continually cognizant of the interactive nature of these forces as they contribute to the formation of career insights and to the extension of individual self awareness. We must seek the blend that balances the input during these early, formative years of childhood and youth. We must strive to insure that a foundation for decision making and problem solving has been established and that this base will serve the individual as he grows and changes in the continuing process of vocational learning-maturation.

INITIAL STRATEGIES FOR ENHANCING VOCATIONAL LEARNING-MATURATION

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The various instructional strategies employed in the Career Development Project represent initial attempts to accommodate, in a developmental way, the process of vocational learning-maturation. While each strategy utilizes one of the four channels of the vocational learning-maturation paradigm, its potential as a strategy may not be so limited. These strategies draw their vocational content and direction from the occupational classifications and worker trait components as contained in the *Dictionary of Occupational Titles* (DOT), devised by the United States Department of Labor.

Vocational Gaming

Gaming is, perhaps, a newer instructional strategy in the educational process. It has been employed in the Career Insights and Self-Awareness Gaming (CISAG) program. CISAG is an experiential attempt at implementing the *self* channel in the vocational learning-maturation process for the purpose of enhancing self and vocational awareness. The program consists of a series of vocational game-like instructional activities in which the student engages in self exploration as it relates to various facets of career building and planning. The games provide students the opportunity to explore and assess their preferences and feelings in regards to their interests, life goals, behaviors, abilities and with reference to work function preferences—that is, whether they like working with data, people, or things. Game play begins with student understanding of generalized information (concepts) pertinent to each of these facets of career development and proceeds with student reaction to these concepts. Since the games foster cooperation and understanding rather than competition to win, players are encouraged to share their reactions and assessments with other players.

In adapting the CISAG program for the deaf student, the component areas of self exploration have remained basically the same as for the normal hearing child. Additional attention, however, is being focused on the communicative and cognitive aspects of the gaming process. Consideration is being given to the language (concepts) employed in the games; the impact of the games on the receptive and expressive channels of communication; and the impact of the gaming process on the student's ability to handle abstractions while utilizing a variety of thinking processes.

A Career Survey

Without adequate information about the world of work, the individual is limited in his vocational maturation. Various strategies within the *informational* channel provide for the needed factual inputs.

An occupational survey recently concluded resulted in the publication of *Career Opportunities for the Deaf* in which 805 occupational titles were identified as potential jobs for the hearing impaired. These jobs ranged throughout the nine major occupational categories (professional through miscellaneous occupations) as described in the DOT and were classified according to their relationship to the work functions associated with each of the three major work orientations. The three work orientations and their associated work functions are shown below.

Data	People	Things
Synthesizing	Mentoring (advising)	Setting-up.
Coordinating	Negotiating	Precision working.
Analyzing	Instructing	Operating-controlling.
Compiling	Supervising	Driving-operating..
Computing	Diverting (amusing)	Manipulating.
Copying	Persuading	Tending.
Comparing	Speaking-signaling	Feeding-offbearing.
	Serving	Handling.

Fewer jobs were classified as people-oriented and involved all of the twenty-three work functions except diverting. *Career Opportunities for the Deaf* is a technical resource document which is serving as a guide to the development and implementation of the remaining strategies.

Occupational Monographs

The career monographs represent a logical extension of the career survey. Unlike most existing monographs, they are being written to meet the precise informational needs of the deaf youth. Following the successful testing of several prototype career briefs, a series of career briefs covering many career opportunities for the deaf in all the major occupational categories will be developed. In addition to providing the usual job information, the briefs will also deal specifically with the on-the-job problems of the hearing impaired and the modifications necessary to accommodate any communication difficulties. The briefs will contain a "communications qualifications profile" which provides a means of assessing the level of receptive and expressive communications necessary to perform on the job. The profiles are based on six levels of communication skills. In the receptive form, audition, manual, and reading are profiled; in the expressive form, speaking and writing. The profile indicates the highest level of communication skills needed in each of these areas. This kind of information will be helpful to students not only in reading about potential work opportunities but in examining and assessing their own means of communication and using these assessments in making their own decisions and plans.

As a channel for *informational* inputs, the career monographs can be used in a variety of instructional ways. They can be used as supplemental classroom readings, as a basis for classroom discussions, in conjunction with particular academic classroom units or other vocational learning-maturation activities.

Slides and Filmstrips

Slides and filmstrips provide a visual dimension to the *informational* channel. These visual aids present specific job information through the portrayal of people engaged in the various work functions. A series of twenty-three presentations are being developed which furnish concrete exposures to the work functions to supplement the primarily verbal and abstract exposures of the gaming strategy. The activities in each work function area will be highlighted rather than specific occupations and occupational duties. Focus will be on the deaf workers and their problems in carrying out the work activities. The filmstrips will relate these work functions to the tasks of school and life giving the learner an opportunity to associate them with his own living and working experiences at school, in the home, and in community life. In this sense, the filmstrips can also effectively engage the *conceptual* and *experiential* channels in the vocational learning-maturation process.

Field Trips

Field trips, as utilized in this model, are designed to enhance the individual's powers of observation. Like the filmstrips, the field visit program highlights the work functions associated with the three major orientations of work—data, people, and things. Insofar as possible, the field visits will provide first hand observation of deaf workers engaging in the twenty-three work functions. Focus will be on the specific activities associated with these functions, the requirements necessary to carry out these functions, and any work role modifications which might be necessary or helpful in accommodating and communicating difficulties which the deaf worker might experience on the job.

Transfer of learning is enhanced in the follow-up activities as the observed work functions are related to past and present experiences in school tasks where the student has performed similar work functions. In this way the *experiential* channel is engaged and related to the *informational* channel to assist students in conceptualizing about these work functions and relating them to their own work preferences and performance.

Learning about work functions rather than about a particular job has a great deal more life-long value. There are many jobs where a particular work function is utilized. The student who learns about a work function and who examines his own feelings about and reactions to that work function can apply this learning to any work he might consider.

Concluding Statement

We are beginning, even if ever so slowly, to recognize and deal with the *internal* dynamics of human learning-maturation as these are evidenced in a variety of psychological, sociological, physiological and economic considerations. We are beginning to emphasize its decision-making qualities as these are inherent in the various thinking operations associated with the individual's mental processing of data inputs. We are moving rapidly beyond the mere informational routines of learning about occupations. We are finding those common bonds that bind the intellectual, the self and the vocational components of human maturation. We are discovering that there is a firm base from which vocational development can be practiced. Now remaining, is its implementation! It is toward this end that this model of career development has been designed and these strategies and materials devised.

CLASSROOM OBSERVATION UNDER CONDITIONS OF SIMULATED PROFOUND DEAFNESS

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Abstract

Two normally-hearing adults used special equipment which enabled them to receive speech visually and vibrotactually but deprived them of auditory stimulation. With this limited sensory input, they observed classroom activities at an oral school for the deaf in order to experience the conditions under which profoundly deaf children learn and communicate. It was found that lipreading was affected by: (1) classroom illumination conditions; (2) optical distractions; and (3) the incomplete or ambiguous nature of the visual stimulus itself. The usefulness of vibratory patterns varied greatly as a function of: (1) the clarity, strength, and consistency of the signal; and (2) the amount and kind of masking and distractions. In addition, it was found that teachers and pupils used a variety of strategies to improve communication in the classroom. The results suggest that this method of observation can give one insight into the receptive capabilities of profoundly deaf children which may lead to the development of instructional techniques to make their learning task easier.

Introduction

Normally-hearing teachers and researchers continually seek new ways to improve the oral communication skills of profoundly deaf children.[1] But because they do not perceive speech in the same way that deaf children do, normally-hearing persons are not likely to appreciate the receptive difficulties which these children encounter in an oral environment.

Several previous attempts have been made to simulate the effects of hearing loss in order to gain a better understanding of this problem. Some normally-hearing investigators have occluded their ear canals (Hebb, et al, 1954), while others have used masking noise to eliminate auditory sensation (von der Lieth, 1972). But most studies and demonstrations have used low-pass filtering of speech to simulate the effects of hearing impairment (Harford, 1964; Glorig, 1971; Ross, et al, 1973). Although low-pass filtering may produce a sound quality that is similar to that heard by *severely* hearing-impaired listeners, the method probably grossly overestimates the acoustic information that is available to those who are *profoundly* deaf (Erber, 1972a, b, c).

Profoundly deaf children seem to perceive little more than the time and intensity patterns of acoustic speech signals (Erber, 1972a, c). Several studies have suggested that they do not *hear* at all but instead detect amplified acoustic signals through vibrotactile receptors in their ears (Nober, 1968; Boothroyd and Cawkwell, 1970). Thus to an oral child who is profoundly deaf, vision (lipreading) is the principal source of speech and language information. For these children, the acoustic output of a hearing aid probably provides vibrotactile stimulation only.

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[1] Profound deafness implies an inability to understand speech by ear alone. It usually is associated with average hearing-threshold levels for 500–1000–2000 Hz poorer than about 95 dB (ANSI, 1969).

In the study to be described, two normally-hearing adults used special equipment which enabled them to receive speech visually and vibrotactually but deprived them of auditory stimulation. With this limited sensory input, they observed classroom activities in order to experience the conditions under which profoundly deaf children learn and communicate.

METHOD

Two observers participated in the study: a research audiologist and a teacher at CID. Both were familiar with methods of oral inter-action between teachers and deaf children in the classroom. The teachers who were observed varied widely with respect to age (23-53 years) and experience (1–32 years), and they employed many different teaching styles. The children in their respective classes represented a wide range of age (4–16 years), hearing-threshold level (52–127 dB average, ANSI, 1969), and learning ability.

To simulate the quality of the speech signal perceived by profoundly deaf ears, each observor received amplified[2] speech through a vibrator (Suvag Vibar) which he held in his hand. To prevent themselves from *hearing* speech, the observers wore circumaural earphones (Archer) to which a low-frequency masking stimulus (90 dB SPL) was delivered from a portable noise generator. Lipreading was their main source of information. They observed during two ½-hour sessions in each of twenty-six CID classrooms. The observers attended closely to the visual and vibratory stimuli which they received and took extensive notes to describe their experiences.

DISCUSSION

ENVIRONMENTAL CONDITIONS

The Optical Environment

Because the observers received only visual and vibratory cues, they noticed some aspects of the optical and acoustic environments which they may have overlooked otherwise. For example, they found that the optical conditions in several classrooms were detrimental to lipreading. Many of the rooms were inadequately illuminated by their fluorescent tubes, and dull wall surfaces absorbed much of the available light. The window orientation in a few of the classrooms either allowed intense outside light to be directed into the eyes of the observer, or it caused the interior of the teacher's mouth to be shadowed. It was possible to lipread under these poor lighting conditions, but the task was difficult and fatiguing. On the other hand, when the room was bright and the teacher faced the windows while speaking, lipreading required much less effort. These observations confirm the results of several recent experiments in which extremes in angle, distance, or illumination were shown to have a detrimental effect on the lipreading performance of deaf children (Erber, 1973).

The use of classroom space and the arrangement of desks also influenced the observers' visual reception of speech. For example, in several classrooms the area behind the teacher was used to display instructional materials, children's artwork, or other interesting objects. It was much easier to attend to teachers who sat before an uncluttered, non-reflecting background (e.g., a blank wall or a clean chalkboard). The movements and gestures of children in the classroom also were a major source of visual distraction, which often drew attention away from the teacher.

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[2] In classrooms with wired group systems, the vibrator was plugged directly into an earphone output jack. In the case of classrooms equipped with wireless or wearable systems, the output of one unit was divided and delivered both to its set of receivers and to a supplementary amplifier which powered the vibrator.

The Acoustic Environment

Research has shown that environmental noise limits the speech reception of profoundly deaf children more than that of children with severe hearing impairments or those with normal hearing (Erber, 1971). Similarly, in this study, several acoustic signals were found to be very distracting when they were perceived through a vibrator. Background noise generated by the children in the classroom often produced vibratory masking. These background vibrations were especially disturbing and disorienting when unpredictable bursts of noise occurred. For example, the children produced undesirable vibratory patterns when they tapped on desks to attract attention, kicked a floor microphone or a desk, or spoke spontaneously while someone else was talking. In many cases, the vibratory patterns of these noises were like those of intended speech, and a recent experiment has demonstrated that profoundly deaf children are unable to distinguish speech from noise when their stress patterns are similar (Erber, 1972a).

CLARITY OF THE SPEECH SIGNAL

The Optical Signal

Many investigations have shown that lipreaders have considerable difficulty in distinguishing speech elements or words which look alike on the lips (Berger, 1970; Erber, 1972b). In this study also, the observers noticed that the optical stimulus often was incomplete or misleading. For example, some names were visually similar (e.g., *Shelly* was mistaken for *Johnny; Amy* was perceived as *Kim*). Some two-syllable words looked like one-syllable words (e.g., *skated*). And some words were ambiguous through lipreading even when the sentence provided contextual cues (e.g., "Rusty got paint on his *nose*." was perceived as "Rusty got paint on his *clothes*."). Unstressed syllables and function words (e.g., *a, the, in, at*) often were not visually detectable in speech presented at a normal conversational rate. Although the observers usually perceived the visually distinctive *wh*, which cued an interrogative sentence, they often could not discriminate among the question words *what*, *when*, and *where*.

Sometimes the speaker himself reduced the clarity of the optical signal. Most teachers understand the importance of facing the lipreader, but some of them became so involved with the content of the lesson that they occasionally shook their heads while stating a negative idea, spoke while turning toward the chalkboard, or read aloud from books with their heads down.

The Vibratory Signal

Although research has shown that vibratory input can supplement lipreading (Gault, 1928; Erber, 1972a), the usefulness of vibratory cues varied under actual classroom conditions. Occasionally, the vibratory speech signal was perceived only partly or not at all. Teachers who used a hand-held microphone often moved it between themselves and the children so quickly that the initial or final portions of utterances were greatly reduced in level. Sometimes the spontaneous speech of children was not completely transmitted, either because they were too far from a microphone when they spoke or because their natural voices were too weak.

Another type of "pattern distortion" occurred when a teacher held the microphone directly in front of her mouth, so that her breath stream caused some plosive and fricative consonants to be felt as extra syllables. In general, clear vibratory patterns were produced when the gain of the amplifier was moderate and the teacher spoke in a quiet voice with the microphone held near her mouth.

At times, the vibratory patterns which were felt by the observers contradicted their linguistic experience. For example, question patterns were not always distinguishable from statement patterns. In addition, the vibratory patterns of some words and phrases did not match the patterns received through lipreading (e.g., the phrase, "Hurry up!" was perceived vibrotactually as one long syllable). Experiments have shown that profoundly deaf children often have difficulty perceiving variations in the stress patterns of speech (Erber, 1971), and in this study also, only accented syllables were detected clearly. Although a prominent vibratory stimulus was produced whenever a teacher called a child's name, several children within a given class often had names which were characterized by the same vibratory pattern (e.g., a single syllable: *Bill, Tom, Ann*).

COMMUNICATION STRATEGIES

Both teachers and pupils used a variety of strategies to improve communication in the class room (see Erber and Greer, 1973). For example, most teachers provided supplementary information in the from of visual aids (e.g., pictures, outlines, or key words and phrases written on the chalkboard) to help their pupils follow the topic of conversation. Most teachers also used natural, expressive gestures while speaking, which supplied cues for sentence meaning (e.g., a teacher pointed to her ear while saying, "I can't hear you!") or sentence structure (e.g., a teacher spoke an interrogative sentence with a questioning expression).

The observers found that most teachers of young children tended to apply a great deal of emphasis to their speech and to use simple, repetitive language. Some of these teachers also seemed to select vocabulary partly on the basis of its visibility. All of these factors made them relatively easy to lipread, and made their speech patterns more distinct. On the other hand, teachers of older children spoke more rapidly with less exaggeration and instead tended to vary sentence structure to enhance their intelligibility. These findings are similar to those obtained in an earlier study (Erber and Greer, 1973) in which repetition, emphasis, structural change, and use of supplementary information were shown to be the basic strategies applied by teachers at CID.

Whenever the observers were unsure of the teacher's intended message, they usually adopted a simple receptive strategy which placed the responsibility for successful communication on the teacher.

For example, the observers either waited for additional information in later sentences, or they waited for the teacher to provide supplementary cues through gestures or written material. The observers could not interfere with lessons by questioning the teacher. However, many deaf pupils, whose behavior was not restricted in this way, also seemed to behave in a similar, passive manner.

Although vibratory signals alerted the observers that someone was talking, they usually had to scan the classroom to determine who the speaker was. This created a serious problem in classes where a conversational teaching approach meant a rapidly-alternating change in speaker. Under these conditions, when the observers tried to locate and then lipread each speaker in turn, they usually missed the first few words of every utterance. They eventually adopted the less frustrating strategy of directing their attention almost entirely to the teacher. Most children were observed to follow this strategy also, in spite of teachers' efforts to encourage them to attend to one another.

In some classes for young children, a hand-held microphone, which the teacher passed to each child in turn, was a very helpful visual orienting device. That is, the microphone served as a pointer to indicate who was speaking. Similarly, in classes where the pupils always raised their hands before speaking, the observers usually had time to re-direct their attention for lipreading each speaker.

Conclusion

An important step in improving oral instruction for deaf children is to understand the special conditions under which they receive speech. Through the use of apparatus that is available in most audiology clinics, it is possible for one to simulate the unique sensory point of view of the profoundly deaf child. Two normally-hearing observers who used equipment of this sort found that the environment, the clarity of the speech signal, and the communication strategies used in the classroom all are factors which probably influenced the deaf child's ability to understand speech.

This study has suggested that further examination of these factors under controlled laboratory conditions is necessary, and several related research projects currently are in progress at CID. We are determining which information contained in the vibratory signal can help persons to identify sentences within small sets, recognize syntactic cues, distinguish children's names, and determine the emotional state of the speaker. We also are determining the effects of sentence length and complexity on the visual reception of speech and are developing a visually-intelligible vocabulary for introductory work with young deaf children. Next year, we will establish an "experimental classroom" in which characteristics of the environment and types of amplification systems will be examined.

The results of the study reported in this paper suggest that classroom observation through reduced sensory input can give one insight into the receptive capabilities of profoundly deaf children. The method is recommended for supervisors, teachers, and student teachers to help them evaluate their own classroom conditions. The combined efforts of teachers and researchers are needed to develop specific instructional techniques which can make learning easier for profoundly deaf children.

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DEAF CHILDREN'S UNDERSTANDING OF RELATIVE CLAUSES AND NEGATION

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In reviewing 50 years of research done using controlled grammar studies, Cooper and Rosenstein (1966) have noted that students leaving schools for the deaf have scores on "grammatical usage" subtests of standardized achievement tests which are similar to those of average fourth grade hearing children. There is also some evidence to indicate that the language comprehension of deaf students is actually even lower than this (Moores, 1967).

Much of the research conducted to date on the language acquisition of deaf students, however, has provided little information on what to do in the classroom to help improve deaf students' language comprehension and production. Some of the research (e.g. Myklebust, 1964; Perry, 1968) has concentrated on the kinds of errors, such as omissions and substitutions, typically occurring in the written language of deaf children, but has said little about which particular language components the students find most troublesome. Other research (e.g. Stuckless and Marks, 1966) has attempted to establish norms of written language development which are useful for group comparisons, but provide little aid in dealing with individual student differences.

(For a more extensive discussion of past research on the written language of deaf children see Quigley and Power, undated.)

Much of the previous research has consisted of linguistically analyzing written language samples, or compositions, produced by deaf children in response to a picture or series of pictures. This approach has been particularly useful in isolating those deviancies, or departures from standard English, which frequently occur in the written language of deaf children (Cooper and Rosenstein, 1966), but gives no information about the students' knowledge of particular structures which may not appear in their writing.

For the past four years, the Institute for Research on Exceptional Children at the University of Illinois has been investigating the language acquisition of deaf students in a manner which will hopefully have significance for materials development and classroom procedure. This research focuses on deaf students' comprehension and production of particular linguistic structures and allows one to make more definitive statements about the types of sentences and structures the students find most difficult.

A set of 22 tests (called the Test of Syntactic Ability) was developed to measure the students' understanding and acceptance of syntactically correct and incorrect language forms in the areas of relativization, question formation, verbs, complementation, conjunction, determiners, pronominalization, reflexivization, and negation. These tests were of two basic types: (1) an objective or "recognition" form where the student must fill in the blank with an item from a multiple choice list, or answer "yes" or "no" to a question about a stimulus sentence, and (2) a sentence correction form where the child must decide whether or not a sentence is correct; if he decides it is incorrect, then he must rewrite it in what he considers to be the correct form.

These 22 tests were given to 450 prelingually, profoundly deaf students who ranged in age from 10 to 19, who had no other educationally significant handicaps. The criteria for accepting a child as a subject were: (1) a sensory-neural hearing loss of at least 90 dB (ISO standard) in the better ear averaged across the frequencies of 500, 1000, and 2000 Hz, (2) an IQ of at least 80 on the performance scale of the WISC or WAIS or some comparable test, (3) an onset of deafness occurring at or before two years of age, and (4) no apparent handicaps other than deafness. The students came from both residential and day programs for deaf students in all areas of the country, according to the population distribution of deaf students in the United States. Samples of written language were also collected from the students in order to compare the language production of the children with the degree of comprehension displayed on the tests.

This paper very briefly summarizes some of the results of that part of the testing which covered relativization and negation. Although the production data from these tests and the students' written language samples are currently being subjected to linguistic analysis, the present paper is limited to a discussion of the subjects' acceptance or rejection of stimulus sentences, both correct and incorrect. Student rewrites of these stimuli will not be considered. Specifically, we are concerned with the question of how often deaf students recognize incorrect examples of relativization and negation, and how well they interpret the meaning of well-formed relative clauses.

Relativization

It has been noted (Cooper and Rosenstein, 1966) that the written language of deaf students generally contains shorter and simpler sentences than does that of hearing students. One of the primary means of constructing complex sentences, so often missing in deaf students' language, is the use of relative clauses. Relative constructions can be classified in at least two ways. The first concerns their placement with respect to the main sentence; the embedded clause can occur in sentence final position ("I saw the boy *who went home*") or in medial position ("The boy *who went home* is my friend"). A second means of classification takes account of the function of the relative pronoun. For example, in "The boy *who went home* is my friend," *who* serves as the subject of the relative clause, while *who(m)* acts as the object of *saw* in "The boy *who(m) I saw* is John."

To check their familiarity with relative clauses, the students were presented with stimulus sentences, each containing an embedded relative clause, and were asked to respond "yes" or "no" to a set of simple sentences depending on whether they agreed with what happened in the more complex sentence; for example:

The girl who hit the boy went home.

What Happened?

a. The girl hit the boy.	yes	no
b. The boy hit the girl.	yes	no
c. The boy went home.	yes	no
d. The girl went home.	yes	no

The students' responses to these questions, then, gave us a measure of how well the students could interpret the meaning of sentences containing relative clauses and provided a means of determining what types of relative clauses deaf children find most difficult to understand.

The results of our testing show that object relatives in final position clauses ("Mary loved the toy *which she lost*") were easier for the children than subject relatives in final position clauses ("I saw the boy *who went home*"). However, in medial position clauses subject relatives ("The boy *who went home* is my friend") were easier than object relatives ("The boy *who(m) I saw* is John"). In general, final position clauses were easier than medial position clauses.

Sentences like "John saw the boy who the boy kicked the ball" were prevalent in written language samples collected during a previous research study of deaf children (Quigley, 1969). Items in one of our 22 tests asked the students to indicate whether they thought that sentences like this with "copied" relatives were correctly formed. As shown in figure 1, younger students accepted sentences like this about 60 to 70 percent of the time, while even the older students accepted them about 30 percent of the time. This would seem to show that although many of the older students have learned or are learning that sentences like this are incorrect, many still accept them as correct. It is apparent that they simply are not aware that the relativized noun or pronoun must be deleted when a relative clause is formed. Our results indicate that this is a difficult problem for almost all deaf students.

Negation

Bellugi (1967) has reported on the acquisition of negation by young hearing children and has proposed stages in the development of negation based on her research. She hypothesizes that in the first stage of acquisition of negation the child's sentences are formed by a rule which positions the negative element outside of the nucleus of the sentence, such as "No the children play in the park," or "The man see a lion not". In the second stage of development, the child moves the negative marker inside the sentence, to a position following the initial noun phrase: "The boy $\left\{\begin{matrix}\text{no}\\ \text{not}\end{matrix}\right\}$ go home". At this stage the contraction *can't* and *don't* appear, but *can* and *do* (without the negative) do not yet function as auxiliaries in the child's language. During the third stage, do-support appears in negative utterances: e.g., "John did not go home." And finally, the child begins to apply a contraction rule: "John *didn't* go home."

Although our negation tests dealt with several types of verbs, this paper will just briefly mention the results of the subtest which measured the subjects' comprehension of do-support in negative sentences.

Figure 2 indicates that items with the negative element occurring at the end of the sentence ("The man see a lion not") were recognized as wrong more often than when the negative element preceded the sentence ("No the children play in the park"). Students found sentences like "The boy didn't was sick" and "The boy no go to school" (Fig. 3) more difficult than either the previously mentioned Neg.-S and S-Neg. items of Fig. 2, or sentences of the type "The boy no did go home" (Fig. 3).

Thus negative elements within the sentence do seem harder for the students to deal with than when the element is at the beginning or end of the entire sentence. That deaf students also have considerable difficulty with the contraction rule is illustrated by Fig. 4, which shows the rejection of sentences containing "willn't" and "amn't". Even the oldest students readily accept these improper contractions as correct forms. It seems that deaf students simply overgeneralize the contraction rule to inappropriate words.

We have very briefly pointed out some of the difficulties which deaf students have in learning to handle relative clauses and negation in written language. Our results confirm what all teachers of the deaf know: deaf children learn to differentiate between correct and incorrect relative clauses and negative sentences much later than do hearing students. A more interesting result is the fact that many deaf students, even at the age of 18, never do learn these structures. We have also found strong evidence of "deviant" rules such as relative copying ("John saw the boy who *the boy* kicked the ball"), which are widely used by deaf children and which must be extinguished before these children can achieve the goal of Standard English. This realization, along with the knowledge that incorrect forms such as "The boy no go" (NP-Neg-VP) are extremely difficult for such children, indicates that the procedure for teaching Standard English to deaf students should have not only the goal of teaching correct sentences, but also the specific goal of overcoming these special difficulties.

Figure 1.—Acceptance of relatives.

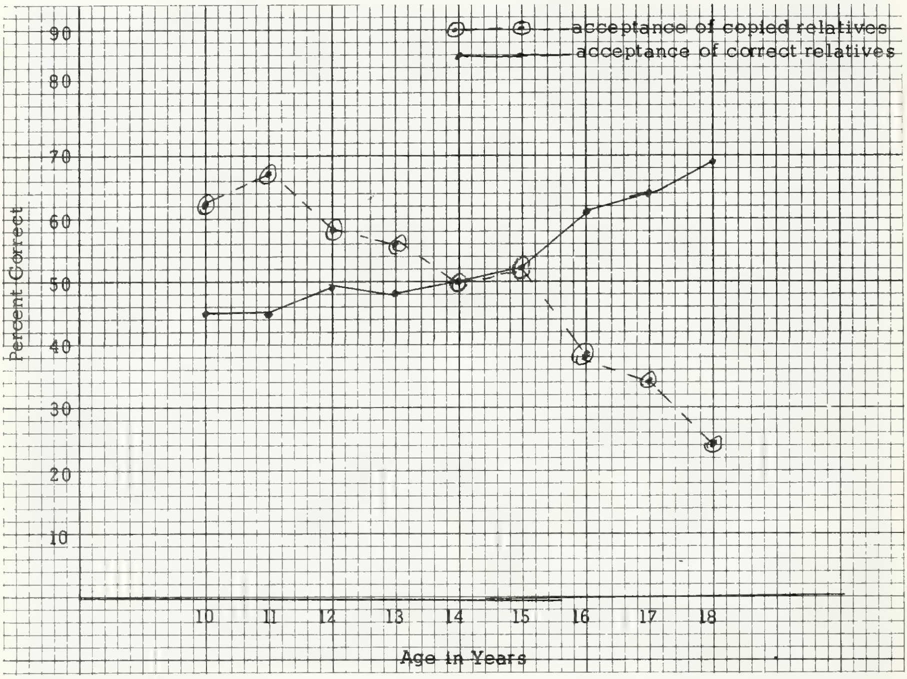


Figure 2.—Rejection of sentence-external negatives.

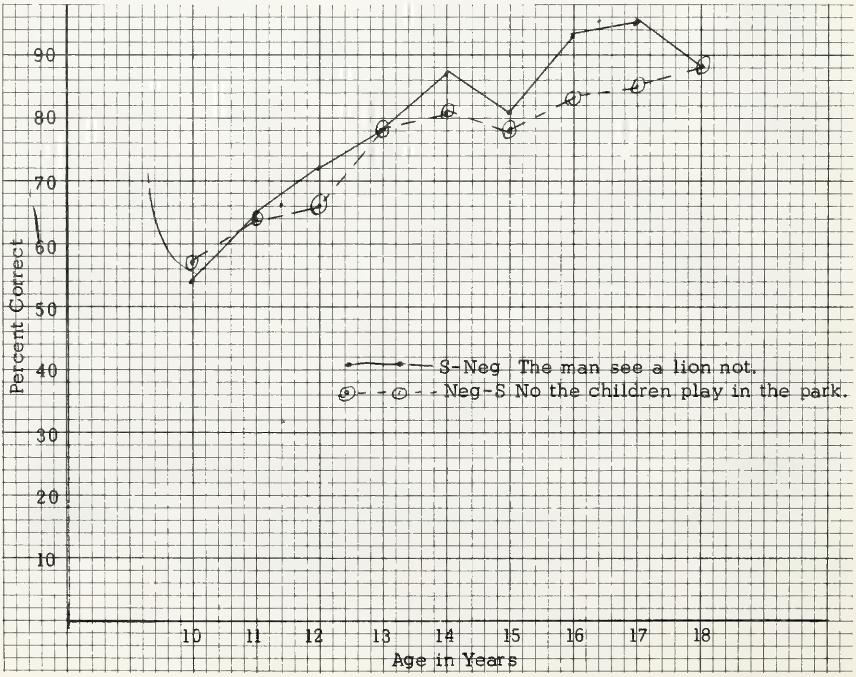


FIGURE 3.—Rejection of incorrect internal negatives.

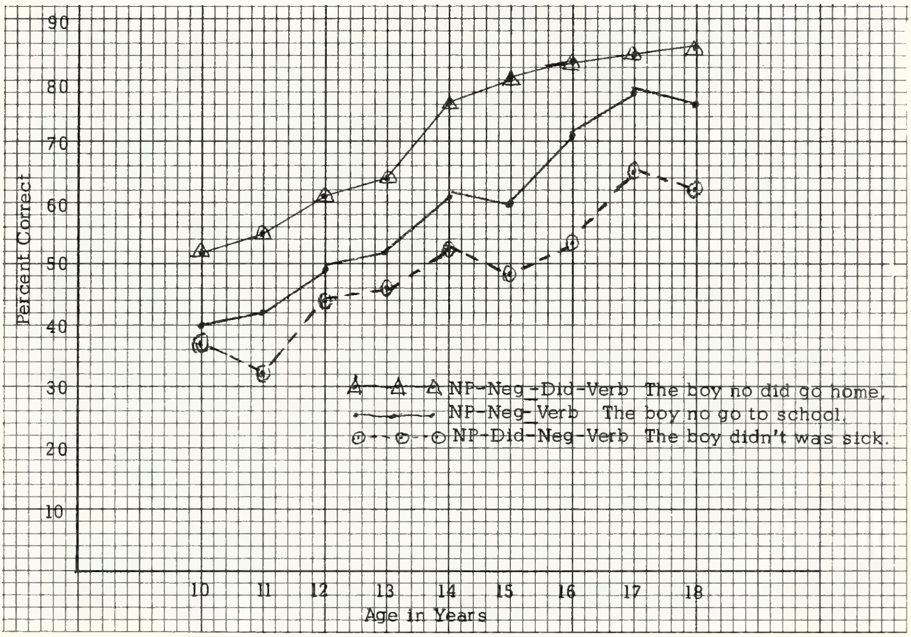
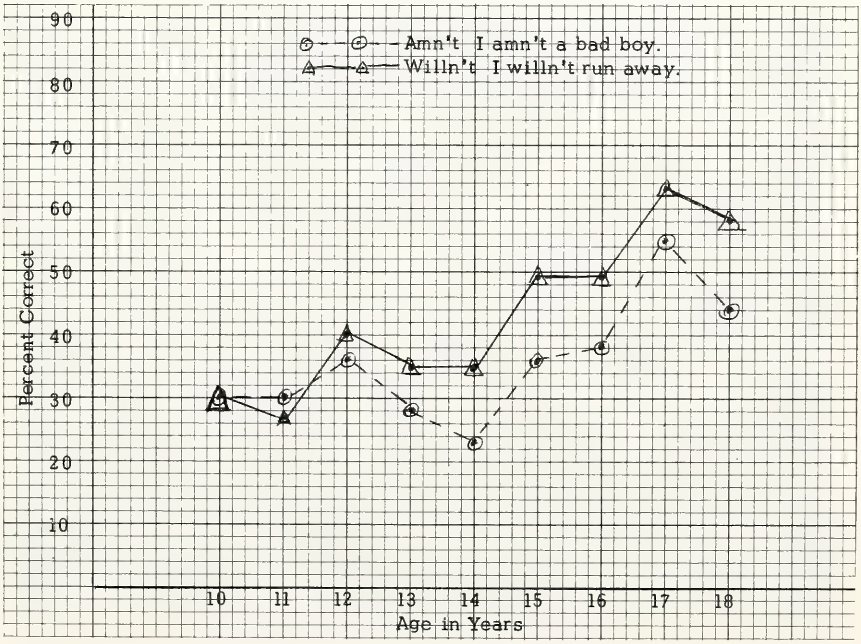


FIGURE 4.—Rejection of amn't and willn't.



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INTERPRETERS FOR DEAF PEOPLE—A STUDY OF METHODS OF EVALUATION, CLASSIFICATION AND SELECTION

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Those of you who are familiar with interpreters and interpreting for deaf people will know that they can be very good, mediocre, or inadequate. Those of you who are not familiar with them, but who have tried to locate one for a deaf person will also know that they are sometimes very difficult to find. And, unless you are fluent in sign language yourselves, there is no way you can judge whether or not the interpreter you may eventually locate is a good one, a mediocre one, or one who is completely inadequate for the task at hand. About all you can do is rely upon the advice of others—who may or may not be qualified to judge—unless the interpreter happens to be one who holds a valid certificate from the Registry of Interpreters for the Deaf.

At the same time, when you look around at successful professional people who are *deaf*, and consider whether or not they could have achieved what they have achieved if they had not had the services of an interpreter, in 99 cases out of 100, you will have to admit that they could not have done so. There are a few notable exceptions, of course, but the great majority of deaf adults functioning effectively in today's world have, at some time or another, been aided in bridging the communication barrier by means of an interpreter. They are, therefore, in our opinion, absolutely vital to a deaf person's ability to function at peak efficiency in a world composed of hearing people. And, as deaf people become more involved in their own destinies, interpreters are going to become even more important. This brings up the question of establishing standards of competency—something we, at the University of Illinois, have been trying to do.

Interpreters vary widely in their abilities—from the neophyte whose only claim to the title is an ability to fingerspell slowly, to the fully qualified professional interpreter who can function in nearly every situation imaginable and with deaf people of all levels of language and communication abilities. While there has been a lot of speculation, very little research has been done in which a systematic study was made of just what interpreting is, just what an interpreter does with his/her hands, arms, face and body, and just what it is that distinguishes an outstanding interpreter from one who is only average.

For, just as there are differences between the competent and the incompetent, there are subtle shades of difference between the outstandingly competent—the type of interpreter whose interpreting permits the deaf person to experience every subtle nuance of meaning that a hearing listener experiences when listening to a gifted lecturer, and whose interpreting is a pleasure to watch for those who are knowledgeable about interpreters and interpreting—and the merely competent, who do an adequate, efficient job of it, but whose interpreting never quite permits the deaf person to forget that he is communicating *through an interpreter.*

Another factor often noted in the field of interpreting is the fact that it is quite possible for two interpreters from the same kind of background, and with the same amount of experience in interpreting to differ considerably in overall competence. No one really knows why this happens—why one interpreter develops into an outstanding professional, and the other never rises above the mediocre. Nor does anyone really know why the same phenomenon can be seen among newcomers to the field—one young person will quickly and easily master sign language to the point of being able to interpret—or at least translate—in one or two years, while another young person of the same age and similar background will take two or three years just to master the fundamentals of sign language, and never quite becomes fluent enough to try his hand at interpreting.

Another question often posed by experts in interpreting is just what are the component skills that go into the act we call "interpreting for deaf people": and how do the skills relate to each other. This question is an important one, for in the answer lies the direction we must take in the future if we are to recruit, train, evaluate, classify—and certify—interpreters for deaf people. In other words, our ability to assure you that you will be getting a competent interpreter any time you need one for a deaf person depends upon our ability to certify only competent interpreters, which, in turn, depends upon our ability to establish standards of performance—which, in the final analysis, depends upon our ability to discriminate between what is of major importance, and what is relatively unimportant among the many separate things interpreters do with their hands, arms, faces, and bodies. And, while we are at it, we should also be preparing for the future, for, with deaf people beginning to participate more fully in the hearing world, an increased demand for interpreters is being noted—a demand that the existing supply of interpreters cannot hope to fill, particularly in view of the fact that a chronic shortage of interpreters existed even *before* the demand for their services began to swell.

This means training. And training means setting behavioral objectives. And setting behavioral objectives means analyzing the task of interpreting in order to establish criteria for performance. It also means establishing some sort of screening criteria for trainees to meet if a lot of time and effort is not be be wasted in vain attempts to train individuals who will never become interpreters.

As you can see, all of these factors are interrelated, and, in order to begin approaching the task of providing deaf people with an adequate supply of competent interpreters, some basic research information is needed.

Our project was designed to provide the needed information through an in-depth study of 30 of the nation's interpreters; a sample which contained representatives of five different levels of competence ranging from the inadequate to the outstanding.

As a preliminary step, a questionnaire survey of the nation's interpreters was conducted in which their opinions were obtained on the relative importance of the various component skills or aspects of interpreting. The resulting data were then used to assign importance values to the component skills on which the study subjects would be evaluated—and, incidentally, proved to be very helpful to the Registry of Interpreters for the Deaf in the development of the scoring system now being used in the R.I.D. evaluation program.

Two expressive skills tasks were developed which were representative of the type of task an interpreter would frequently encounter in the life situation (with the exception that the tasks were audiotaped instead of delivered live), and programmed so that successive parts of the tests were delivered at three different speaking rates; 130, 150, 170 words per minute. Reverse-interpreting and translating tasks were developed which consisted of videotapes of deaf persons signing and fingerspelling. The tests ranged in gradually increasing order of difficulty, from the fairly easy task of reverse-translating for a deaf speaker using sign language in correct English word order in a simple story to the extremely difficult task of reverse-interpreting for a deaf speaker using idiomatic, pantomimic sign language (Ameslan) as a deaf person of limited language ability would use it. To round out the interpreting skills tasks, a 10-item pantomime task was also developed to assess expressiveness, there being no obtainable test of dramatic ability.

Along with the interpreting skills tasks, a battery of psychomotor, psychological and intellectual tests were selected on the basis that they would measure one or another of the abilities which might be related to interpreting performance.

The 30 interpreters who eventually became our subjects were selected on the basis of their falling into one or another of the five competence categories we had decided upon; and were selected with the help of a five-man advisory committee composed of nationally recognized experts on interpreters and interpreting.

The subjects, in groups of three or four, were brought to the University of Illinois in March and April of this year for three days each. Along with being administered the batteries of psychological, psychomotor and intelligence tests, the subjects were videotaped during the expressive skills and pantomime tasks, and audiotaped while reverse-interpreting from the color videotapes of the deaf people. Detailed histories were taken from each, which included the amount and types of interpreting experience they had, the age at which they first began interpreting, the amount and types of contacts they had with deaf people while growing up, and so forth.

The last group of subjects finished their tasks on April 17th, just before the end of the project's first budget year, which was April 30th, 1973. On May 9th, we were informed that the project would not be funded for the second year. There simply wasn't enough money due to budget reductions in the Rehabilitation Services Administration.

While it is somewhat academic at this point, we will, nonetheless, explain briefly what our plans were had we been able to continue. We were going to bring in three independent five-man teams of judges to evaluate the videotaped and audiotaped performances of the subjects—to obtain a more objective classification of the subjects than the opinions of the project staff and advisory committee. We were going to bring in several teams of expert reverse-interpreters to reverse-interpret onto audiotapes the videotaped performances—as a check on accuracy. We were going to bring in deaf people of three different levels of language and communication ability—as a check on comprehensibility of the interpreting and translation as a function of increasing speed in speaking rates. And we were going to compare all of the interpreting performance data with all of the psychological, psychomotor, and intellectual test (and sub-test) scores as well as with the experience and backgrounds of the subjects—in an effort to determine whether there were any relationships between level of interpreting competence and test performance and experience. If significant differences were found in the correlations of competence and test performance among interpreters of different levels of ability, then the study would have been replicated with a new group of subjects, with students in manual communication classes, and in interpreting classes. We would then have been in a position to decide whether or not the development of a predictive test of interpreting ability was feasible.

At the time we received word that the project would be phased out by August, 1973, we had only just finished preparing the test scores for keypunching. We cannot, therefore, make any statements about our subjects other than the very general ones permitted by an examination of the few tables we had time to prepare.

First, it would seem that our sample was considerably above average in intelligence, having a mean I.Q. on the Wechsler Adult Intelligence Scale of 121.2 on the verbal scale and 119.9 on the performance scale. Most were also college graduates, with a good percentage having graduate degrees as well.

In the Christensen-Guilford Fluency Test, the group as a whole scored above average in their creative thinking abilities, as measured by the recognition of symbolic or structural aspects of words, association of words and ideas, and the ability to rapidly produce words in connected discourse.

On the California Psychological Inventory, a personality test, the subjects scored at or above the mean on all personality factors save one (the need to make a good impression), perhaps indicating, as the test designers claim, that they were a mature, well-adjusted, stable, and efficient group of people who had no overwhelming need to impress others.

On the Modern Language Aptitude Test, a battery of tests designed to measure such things as auditory alertness, ability to mimic speech sounds, vocabulary, sensitivity to grammatical structure, and rote memorization ability, the subjects under 40 years of age did much better than those over 40. Generally, the older a person was, the less effective he was on all the sub-tests—with one exception. The 26- to 30-year old group did better than the youngest group (20 to 25 years of age). This trend was also evident in the scores on the Purdue Pegboard, a motor performance test which measures hand and finger dexterity, although the oldest group (those over 55 years of age) out-performed the next younger group. (This might possibly be explained, however, by the fact that the two oldest subjects were women who knitted as a hobby.)

The Minnesota Paper Form Board test, which was administered in the hope that it would yield some information on the subjects' organization of materials in space, showed that up to age 45, the group performed far better than the norm, with their scores placing them in the 81st percentile. There was a drop at age 46 to 50 (to the 65th percentile), but groups over 50 years of age ranked at the 33rd percentile. Except for the two oldest groups, there did not seem to be any relation between age and performance on the Embedded Figures test—a test of visual organization ability. Most of them scored within the normal range in the time it took them to locate a series of given figures hidden in increasingly complex designs.

Without intensive statistical analyses of the data, this is about all we can tell you about the study results. Until we can somehow, some way, get those taped performances evaluated by independent judges, there is no way we can begin to examine possible relationships between the test performances we have just discussed—and the still unknown factors of just what it is that makes an interpreter good. Or bad. Or just average. Opinions we can give you, but facts we cannot—at least not at this time. Not until we can find some way of finishing the study.

MINNESOTA EARLY LANGUAGE DEVELOPMENT SEQUENCE (MELDS)

Charlotte R. Clark and Donald F. Moores, University of Minnesota, Minneapolis

The Minnesota Early Language Development Sequence (MELDS) is a program of structured lessons used by teachers and parents to facilitate the development of language skills in young hearing impaired children who have little or no language. To enhance understanding, MELDS effectively combines two visual language systems—rebuses (picture words) and the vocabulary of American Sign Language.

Rebuses are easy for children to learn and, in most instances, give spoken words and signs more meaning. Each rebus is printed on an individual card. This allows children to see language spatially and to build manually many different sentence patterns. The use of rebuses also provides the learner with practice in gross decoding of printed symbols and the opportunity to learn a variety of reading skills which will later transfer to the reading of printed text. Figure 1 is an illustration of rebus vocabulary and a passage.

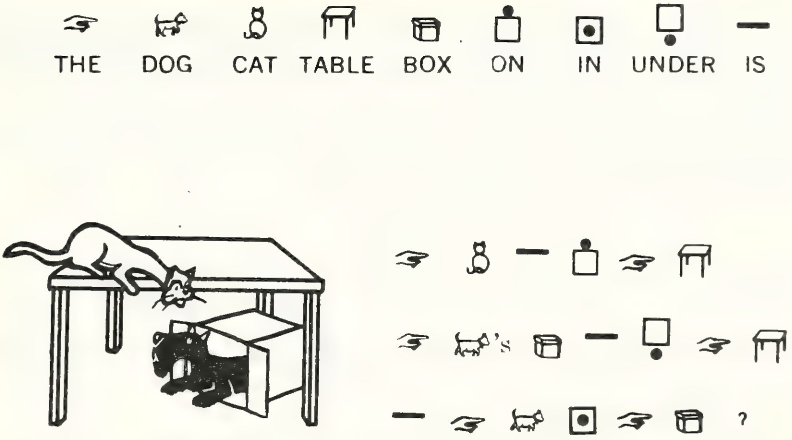

Figure 1.—Illustrative rebus vocabulary and passage.

During the critical language learning period, many hearing impaired children are engaged in the difficult and laborious task of trying to understand and produce spoken words. Sign language serves at this time as a convenient aid to communication and to the acquisition of language.

The program may be used with children as young as 2 or 2 ½ and is appropriate with small groups in the classroom. Direct and guided parent involvement is an important aspect of MELDS. In fact, much of the 350 word vocabulary was suggested by parents. The 112 classroom lessons and 112 correlated parent lessons require approximately 20 minutes of structured teaching time per lesson.

The teaching procedure follows a basic sequence in which rebus words or sentences are put into a pocket chart. The teacher or parent points to and says each word then gives the appropriate signs. Various activities such as matching to objects or pictures, and physical demonstration are used to convey meaning. As the child learns the vocabulary, he is also presented many different sentence patterns like those which are learned by the normally hearing child before the age of four. The child is not expected to produce these sentences verbatim but to progress toward them at his/her own rate. The activities are designed for constant and active involvement of the child in the teaching-learning process.

Classroom materials consist of a teacher's manual, an outline of classroom and parent lessons, a compilation of parent lessons, pupil worksheets, decks of rebus cards, picture cards, color cards, sentence cards, teaching pages and a glossary of signs and rebuses.

Each teacher receives sets of parent-lesson envelopes which are sent home from school each day with the child. This allows the teacher to keep track of the child's progress and control his or her position in the program. All materials necessary for teaching the parent lesson are within the envelope. In addition to the envelopes, parents are initially given a pocket chart, a glossary, a notebook for storing the used lessons, and an empty rebus box in which to file cards.

MELDS is primarily a receptive language program but contains optional expressive language activities. Since the 350 word vocabulary is rather small, parents and teachers are encouraged to use it in many different sentence patterns.

The program, designed for use in one academic year, provides for the transition of 15 rebuses into printed words and 15 signs into fingerspelled words in the last 20 lessons.

SUMMARY

General interest shown—No negative reaction.

MODEL SECONDARY SCHOOL FOR THE DEAF, DEPARTMENT OF ENGLISH, WASHINGTON, D.C.—PRESENTATION

I. INTRODUCTION, Ben Schowe, Jr.
II. FILM—Action + Reaction = Interaction; George McClendon, editor
III. WORKSHOP—FILM-MAKING, George McClendon and Sarah Val
  GROUPTALK, Ellen Erikson and Linda Risser
  VIDEO STORIES, Mary Baker and Betty Rosenbloom
  WORKSHOP—WRITING, Josephine Diagonale and Ben Schowe, Jr.
IV. PAPER—People to People: The English Classroom; Mary Baker, Josephine Diagonale and Ellen Erikson

INTRODUCTION TO—ACTION PLUS REACTION EQUALS INTERACTION

Ben Schowe, Jr., Ph. D.

(A 15 minute film and a 25 minute demonstration by members of the English Department of the Model Secondary School for the Deaf, Gallaudet College, Washington, D.C.)

Shortly, you will see a 15 minute silent film showing how teachers in the Model Secondary School for the Deaf English Department are immersing an experimental group of young students in communication. The program is structured by what James Moffett calls an Action-Response model of language learning. A student may take action, he writes something, for example, then as a result of reaction to the writing from others, he revises his paper. Next, you will be freed from the press of your chairs to visit any or all of the four stations where members of the department will show you written, videotaped, and filmed work of students. At the stations you will have a chance to talk about specific ways in which *action* is made more meaningful to students, and students are helped to acquire the skills of *reaction* (response to action), the second element of the formula for *interaction.* The Action-Response process is defined and the theory explained in two books by James Moffett: *Teaching the Universe of Discourse* and *A Student-Centered Language Arts Curriculum, Grades K–13: A Handbook for Teachers.*

Moffett says that the practical way "to provide individual students enough language experience and feedback is to develop small-group interaction into a sensitive learning method" (p. 12, Handbook). To this end he refers teachers to Babette Whipple's training techniques for teaching discussion skills as outlined in her monograph, *The Grouptalk, Occasional Paper No. 10,* Educational Services Inc.

In the film, notice that communication between peers is emphasized, in keeping with the realization that there is more communication between peers than between students and teachers, students and parents. Students discover that their communication with peers on worthwhile topics is rewarding, learn to think logically, listen critically to the views of others, and express themselves clearly. Also, you will see in the film how grouptalk skills enhance other school activities.

One of the activities enhanced is the writing workshop, a technique whereby students are thrust into the role of becoming critics of each other's writing. Papers that students write are projected on an overhead projector, allowing all members of the English group to analyze the paper; sometimes Xerox copies are made to allow different students to confer with each other on a one-to-one basis about their papers. Peer feedback on papers encourages much more interaction than feedback from just the teacher. And the student writer revises and extends the theme of his paper much more in response to his classmates than in response to his teacher alone. The benefit of grouptalk instruction can be seen when the discussion of papers becomes increasingly logical and respectful of the peer writer.

Storytelling, another activity receiving special attention, is demonstrated briefly in the film. To date 28 stories and poems have been told on videotape by deaf people—some are with sound, some are silent. Students discuss the stories and then read them—we have adapted some stories for easier reading. Later students will be encouraged to tell stories; perhaps they will be stories they have written themselves.

In this film you can see the extent to which film-making students are engulfed by situations demanding explicit communication in the planning, executing, and editing of their film to portray everything from fact to mood—portray facts and moods to a critical peer audience of classmates. The student film-maker and his critics see the final proof of their work in the reactions of their schoolmates and teachers.

Try to bear in mind that in all of these activities the focus is on challenging the students' thinking and helping them discover ways to express this refined and extended thinking. Many details such as grammar in writing and operation of cameras in filming are not neglected but they are not the main focus. Grammar and operations receive attention as students realize that they are essential to making themselves more easily understood.

Now let us take a look at our students at work, as models of Action-Response learning.

PEOPLE TO PEOPLE: THE ENGLISH CLASSROOM*

Mary Baker, Josephine Diagonale, Ellen Erikson, Model Secondary School for the Deaf, Washington, D.C.

(A Discussion of the Action-Response Model of Language Learning as Implemented in a Class for the Hearing-Impaired)

To say that language is the unique characteristic of man and that for language interaction to happen requires the presence of at least

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*Paper not read at the meeting. Because this paper forms the basis for the Model Secondary School for the Deaf's presentation, on preceding pages, it has been incorporated in these *Proceedings*. Copies were made available to participants of the meeting.

two persons in some sort of relationship to each other may seem simplistic on first thought. Reflections on this statement, however, have led the English Department of the Model Secondary School for the Deaf to adopt the philosophy that language usage is social behavior and that language learning is fostered through person-to-person confrontation and interaction.

> One of the unique qualities of dialogue is that the interlocuters build on each other's sentence constructions. A conversation is verbal collaboration. Each party borrows words and phrases and structures from the other, recombines them, adds to them, and elaborates them . . .
>
> Inseparable from this verbal collaboration is the accompanying cognitive collaboration. A conversation is dia-logical—a meeting and fusion of minds even if the speakers disagree . . . where thinking is involved at all, it is joint thinking; dual "logos" is at work. While participating in this mental duet, we are incorporating the points of view, attitudes, ideas, and modifications of ideas of our partner, even if we openly reject them.
>
> I would like to advance an hypothesis that dialogue is the major means of developing thought and language . . . [1]

In the course of our efforts to develop a curriculum, we found James Moffett's work [2] and decided to adopt his theory and adapt his procedures for our students. Moffett provides teachers with both curriculum and classroom strategies based on the sets of relationships that exist between speaker, listener, and subject. This set of relationships is demanding, complex, and always dynamic. The function of teachers is to help the student become more and more aware of the subtleties and implications of the speaker/listener/subject relationships by helping him "to perceive how he *is* using language and how he *might* use language." [3] Rather than being compared negatively to either a person or a norm, each student is considered in terms of where he stands on a continuum of developing language.

The purpose of this paper is to focus on some classroom strategies and to introduce the Action-Response model of language learning as we have derived it from Moffett's work and applied it to the English classroom in a high school for the hearing-impaired.

Moffett suggests that the only way to implement the Action-Response model in the classroom is:

> to develop small-group interaction into a sensitive learning method. The teacher's role must be to teach students to teach each other. Thus he frequently breaks the class into small groups for conversing, acting, reading, and writing, setting the structure of these groups by training them, consulting with them, and relating their activities to whole class presentations.[4]

The following excerpt from a small-group interaction among a group of five students illustrates language development in the Action-Response model. Cognitive, affective, and semantic development are dealt with in the total perspective of the speaker/listener/subject relationship. The group was discussing the question "Which is better, a Volkswagen or a Cadillac?"

> JIM. A Cadillac is safer than a VW. A VW is easier to drive. Depends on how many people you have.
>
> TONI. Right. When a VW is crowded, it's really hard to turn. Can't turn.

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[1] James Moffett, *Teaching the Universe of Discourse: A Theory of Discourse—A Rationale for English Teaching Used in a Student-Centered Language Arts Curriculum.* Boston, Houghton Mifflin Co., 1968, pp. 72, 73.

[2] Moffett, *op. cit.*, and *A Student-Centered Language Arts Curriculum, Grades K–13: A Handbook for Teachers.* Boston, Houghton Mifflin Co. 1968. (What we have learned from Moffett's theoretical construct and from his handbook is reflected throughout this paper as well as in specific quotations.)

[3] Moffett, *A Student-Centered Language Arts Curriculum*, p. 11.

[4] *Ibid.*, p. 12.

Andy. A VW has a longer life than other cars—about 20 years.

Jim. A VW doesn't have life . . . Cars don't have life.

Andy. It runs.

Jim. Life. Life? Cars have life? Stupid. You're off the point talking. What do you mean a VW lives longer? Prove it.

Teacher. (interrupting) That's a good question for another time. "What does life mean?" or "Does a car have life?" Let's leave that question for next week, O.K.?

Jim. Why does a VW live longer?

Andy. It runs about 20 years. A Cadillac runs only about 5 years.

Jim. My next door neighbor has a VW. He takes care of it. Washes it, all that.

Andy. I'm talking about the engine.

In this example, one can watch the growth of a concept happening in the most natural and meaningful way: without drills, vocabulary lists, or isolated sentence practice. The students are involved with each other and with the information they are sharing; therefore, the concept is embedded within a context they will remember. They become language teachers to each other: the first student makes an assertion; the second student challenges; the first student qualifies his original statement according to the specific feedback he is given. By teaching the students to teach each other, the teacher establishes an environment which provides maximum opportunity for trial and response.

This kind of small-group discussion accompanies each major activity in varying degrees of formality and structure. Whether the students are involved in reviewing a movie, analyzing their own stories, discussing *Tom Sawyer*, or comparing a Volkswagen and a Cadillac, the intense give-and-take of the small-group interaction is an essential element. Each discussion has a focus—the film, the story, the reading, the topic. Language becomes the means to an end: the student views language not as *what* one learns, but as *how* one learns.

The Action-Response model of language learning is derived in part from the universally applied "trial-and-error" method of learning a skill or making a discovery. However, trial and error most often has been the practice of individuals, not the method implemented in a classroom; error in the classroom has been closely connected with shame or punishment, rather than with the freedom to try again. Moreover, the trial-and-error label might imply that one learns only from errors. The major concern of any classroom should be success—and this success comes from knowing not only what one has done wrong, but also what one has done right. The Action-Response model allows for both and opens the students' minds to many alternatives. The student acts: he films a movie, writes a story, reads a story, watches a story, or discusses a topic; he and others then respond to that action: they read and analyze each other's stories and films, they discuss their various interpretations of the story, they comment on how well they discussed the topic. In acting and then heeding the results, in becoming aware of alternatives and adjusting the action, the learner plunges into a process that demands his full resources, allows him to make errors, and then offers him feedback and alternatives to action. Errors are accepted by the teacher and student alike as an essential earning tool, because the environment is supportive and the goal is success. With great surprise and relief, the student discovers that "It's OK to make mistakes."

Poor motivation, environmental deprivation, and egocentricity lead to three major communication problems.[5] For the apathetic student, small-group interaction provides involvement with language in a variety of ways: playing word games, dramatic activities, discussion with peers, reading and writing. To help compensate for the environmental deprivation suffered by hearing-impaired youngsters, the small group offers opportunity for vicarious and emotional experience through drama activity, discussion, and story telling. It allows students to share their individual points of view and unique backgrounds.

> Since egocentricity consists of being unaware that any other interpretation is possible, the learner needs other points of view on the text, which is exactly what he will get in a small-group discussion with peers.[6]

Egocentricity often blocks clear reception, because the student fixates on a word or a phrase that has particular meaning for him, causing him to ignore the rest of the text or to distort the meaning of sentences and sentence relationships. Egocentricity reveals itself expressively in various ways, such as irrelevance, gross overgeneralization, shifting tense, a story sequence with huge gaps and lack of transition—all of which proceed from the author's viewpoint that the reader sees the world from the same eyes, mind, and physical location as the author. In our classes, we have seen instances when students will request further elaboration from a peer author because a passage is unclear; the student's oral response will adequately fill in the gaps with the necessary elaboration to complete the story. The irony, however, is that the student-author at first cannot see his oral elaboration as a necessary addition to his written expression; and the student-reader takes it for granted that it is his own poor reading comprehension and not the egocentric writing that is causing the misinterpretation. In this situation, the other student members of the group and the teacher give enlightening feedback.

Through small-group interaction, each individual student receives honest and significant feedback from an audience whose response helps the individual toward greater clarity and precision of thought. In this environment, each individual becomes an actor/responder who values the feedback of his audience in developing his own thinking skills and who in turn is valued for the insights he gives to other students. A negative environment, in which it is implied that the student is a deficit model, is replaced by an environment that fosters collaboration and free exchange of ideas.

Small-group interaction, however, does not just happen. The student must learn to look to his peers for feedback as well as to trust and value his own opinions. The teacher also must learn; she must learn to release the student from the bond of dependency, allowing him the right to try, to stumble, to choose—to be.

One method of training teachers and students in small-group discussion is Babette Whipple's "Grouptalk." [7] After the students have had this training, they are better able to function in groups formed for other purposes.

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[5] *Ibid.*, pp. 18–20. (Suggestions for dealing with these factors are found throughout the Moffett curriculum.)

[6] *Ibid.*, p. 20.

[7] We first learned of Grouptalk in Moffett's *A Student-Centered Language Arts Curriculum*, pp. 51–54. We have since met and consulted with Dr. Whipple. Whipple has continued her work with "Grouptalk" and is now in the process of completing a book—*Grouptalk: A Multipurpose Learning Technique for Small Groups*—which she has generously shared with us.

> Grouptalk is a conversation in which a leader, using a recorder, helps a small group of people to follow rules while they talk together to try to answer a discussion question.[8]

Grouptalk is a structured technique which follows a set procedure and specific rules. First, the students must understand the question and agree on the meaning of terms. For example, does the question "Should a boy kiss a girl on the first date?" mean the boy's or the girl's first date, or the boy's and the girl's first date together? The discussion itself is the place for opinions, anecdotes, and conjectures. Contributions can be in the form of adding new information or of reconfirming what another student has said. Responses can be verbal (asking questions, calling for clarification or elaboration, contradicting) or nonverbal (nodding the head, laughing, looking confused or non-committed). Responding also may mean telling the speaker he is "off the point." At the end of each discussion, the students summarize the conversation and then view a playback on the videotape. It is during this playback time that they evaluate themselves on how well they followed the rules of Grouptalk.

The teacher's function in all of this is to guide the process. At no time is she to contribute to the content of the conversation. Her function is to see that the students follow the rules and to praise and correct accordingly. Because leading a Grouptalk requires the teacher to step into a new role, Dr. Whipple cautions against using Grouptalk without special teacher training.[9]

Student training in Grouptalk does not happen in isolation. At the same time that the students are learning discussion skills in the structured setting, they are also using them in various classroom activities.

When the small-group discussion was integrated with film-making, for example, the result provided a highly motivated language-learning experience. The process—creating the film, viewing it, discussing it with peers and the teacher, editing it according to the feedback, and then reviewing it—is an application of the Action-Response model of language learning. When a student-critic says that he doesn't understand a section of the film, the film-maker challenges that critic to be more specific and to support his opinion by citing examples from the film. If the critic is not able to be more specific, another student offers criticism which clears up some misunderstanding. The film-maker learns to see through the eyes of his audience and therefore begins to think from that perspective when editing and planning another film. While technical errors are painfully obvious to both the movie-maker and his audience of peers, the important learning comes to the film-maker when he must justify and clarify his film to his peers and then edit to reflect their feedback.[10]

When we apply the Action-Response model to the reading classroom, we find that we must make adaptations for our special population. Moffett declares that a major cause of comprehension problems, and therefore of reading difficulties,

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[8] Whipple, *op. cit.*, manuscript page 1–1.

[9] Whipple, *op. cit.* This manuscript includes an elaborated definition and full discussions of teacher training, student procedures and rules, and adaptations of the technique for special populations.

[10] George McClendon, a member of the English Department of the Model Secondary School for the Deaf, has offered a class in film-making to interested students. We wish to thank him for summarizing the Action-Response model of language learning in connection with film-making.

> is experiential and, by definition, cannot be removed except in other activities . . . reading comprehension will always stand in some ratio to what an individual has done, heard, seen, and felt in his personal life.[11]

This statement applies to all students, hearing and hearing-impaired. In an effort to expand our deaf students' world—to expose them to environments, ways of living, and ways of solving problems that are different from those they know first-hand—we have developed a special method of using story-tellers to make available many stories from the body of literature known by most young people. We are videotaping these storytellers as they captivate our student audiences.

As an example, on one of our videotapes Eric Malzkuhn tells the story of how Tom Sawyer got his friends to help him whitewash the fence. Most hearing students of junior high school age have not read *Tom Sawyer*, but most of them have heard the story and would recognize any allusion to it. In contrast, many deaf students of that age have neither read nor heard of the story and would not get any meaning from an allusion to it in any other reading they do. They are caught in a vicious cycle: because they do not hear language and hear stories, they have difficulty in reading; and because they do not read easily they do not enjoy it and therefore read less and less. They tend to lag behind hearing peers in understanding complex language, in understanding allusions to well-known stories, and in school achievement.

Moffett recommends that the teacher "read large quantities of stories and poems to students. Before pupils can read much themselves, this practice is of course a necessity if their appetite for literature is to be both nourished and satisfied.[12] The videotaped stories and poems—whether used as part of a class lesson or as a reward in free time—immeasurably supplement the amount of reading that the teacher can do for the students.

We have seen our students watch a videotape and light up with understanding and appreciation of the storyteller's art; they have picked up new signs, expressions, and ideas and have begun to use them in their own conversation. This is immediate carry-over of learning. Even more significant and exciting, however, are the long-range learning implications in this videotape story library. The student's action consists of sitting or sprawling in front of the videotape, "listening" to the storyteller. His reactions include laughter, absorption, enjoyment, empathy, anticipation—even boredom sometimes. Those who can read the story in the original or in an adapted version find it available. If the student enjoys the story, he responds by reading it with heightened interest. Sometimes he responds by interaction with other students, retelling or discussing parts of it. Sometimes he will tell a story of his own to another student; the teacher then may ask him to tell his story for the videocorder or to write it down. Watching a videotape leads to reading and writing words on paper—the cyclical possibilities for language learning activities are endless.

The videotapes contribute to the affective and cognitive development of the student: he experiences the pleasure of absorption in a good story, he increases his exposure to educated deaf adult models and to their language, and he increases his knowledge of stories known by his hearing peers. The experiential gap is therefore lessened.

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[11] Moffett, *A Student-Centered Language Arts Curriculum*, p. 19.

[12] *Ibid.*, p. 99.

Action-Response in connection with the student as writer becomes the writing workshop. Its aims are threefold: first, to reinforce the larger concept of language as a means of cognitive and personal expression, as opposed to language as system and structure; second, to expand the writing activity into a workshop process that includes small-group discussion; and third, to lead the students to a higher level of writing and more enlightening levels of response.

In the writing workshop, the student writes, submits his paper to his peers for their reactions, discusses comments and suggestions with the group, and then reflects and revises as he chooses. When we began the writing workshop, the students' habit was to hand the finished paper immediately to the teacher. It took many weeks before the students spontaneously exchanged papers among themselves. The students' initial level of response was limited to name calling and to comments about superficial aspects of language: "You're really stupid, this should be a plural;" or "Dummy, wrong spelling;" "You're really stupid, but I'm smart." Students seldom challenged vague thinking, unsupported generalizations and illogical conclusions; they rarely offered alternatives. Though all student reactions are valuable and are encouraged, the teacher's special role is to help them raise the level of their feedback response from an emphasis on subject-verb agreement and the addition of the s-morpheme to an emphasis on content and message. Logical development, use of supporting details, specific word selection, and sentence variety and relationships are the real components of rhetorical power.

As experience in the workshop increased, affective behavior began to change. Name calling disappeared; genuine open emotional response happened spontaneously, freeing the students to want to share their writings with each other. Gradually the students were able to pinpoint the reasons for their enjoyment: "The part where the seal is splashing in the bath-tub—that's really funny." Also personal experiences were shared that either supported a particular story or offered an alternative point of view. Sometimes students even chose to share their papers with us, not as "teachers" but as individuals whose curiosity was piqued by their emotional response to each other and by their critique of each other's work. We became not the ultimate judges of good and evil, but simply other points of view.

Cognitively too, behavior changed. In addition to commenting only on grammatical structure, the students began to ask for clarification and elaboration: "I don't understand this part." "What made Bill so angry about his motorcycle?" "You should write more about the man's family."

After these discussions, students returned to paper to revise their writing. Clarifying thought, adding detail, developing an idea was no longer an academic exercise, but rather real exchange with an audience. The language, form, and content of these writings were adjusted as a result of these discussions. Students who wrote three-line stories usually doubled their output in the second draft. A half page first draft story resulted in a full page on revision. On all levels, increased elaboration was carried over to first drafts of later assignments. More detail and specificity were manifested on the word, phrase, and sentence level. As thinking and story became more complex so did sentence structure and sentence relationships. Organizational unity of the papers ranged from a simple beginning/middle/end cohesion to more sophisticated relationships of problem/analysis/resolution, cause/action/result, action/development/reversal-of-initial action. Characterization began to be specified from a universal Everyman, "the man," to a specific personality, "Mr. McWhite." Humor appeared in the form of comic elements in the stories. One student even wrote a satiric reversal of a nursery tale.

The teacher's role in the writing workshop is to structure the environment and to guide the process. Students choose their own topics. They are offered a choice of stimuli to spark their imaginations, if indeed they need sparking: i.e., pictures, fables, objects. Each student writes from his own point of view, submits his paper to the workshop process and revises his paper in response to his audience. Periodically the students compile their writings for a student publication.

The Action-Response model of language learning fosters an atmosphere that frees students and teachers to develop confidence in themselves as thinkers and communicators. No longer didactic, the teacher opens her mind to ideas and alternatives suggested by the students. No longer mute and defensive, the students become active speakers and listeners, writers and readers—free to offer their own ideas and to challenge the ideas of others. The environment is one of growth and improvement in communication, scholarship, and self-assurance.

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PROGRAMING A SEQUENTIAL PROGRAM OF AUDITORY TRAINING FOR HEARING IMPAIRED CHILDREN

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Effective use of residual hearing by hearing impaired children has become increasingly feasible with improved acoustical aids. Auditory training is recognized by deaf educators as an important and necessary part of the hearing impaired student's academic and social development. However, the blatant lack of a concise and cohesive program of auditory training, coupled with a lack of instructional time within the framework of the classroom prevents a full realization of the students development that may be possible through the acquisition of critical skills of auditory perception.

We envisioned, as a possible solution of this problem, a program of auditory training that would fulfill the following criteria:

(a) Allow the child to work independently of the teacher.

(b) Permit the child to progress at his own rate.

(c) Give the child knowledge of his progress immediately.

(d) Motivate the child to make better use of his residual hearing.

(e) Allow the child to progress in small increments of learning, thereby insuring the optimum opportunity for success—accenting the positive.

(f) Provide the child an opportunity to follow normal patterns of language acquisition.

We feel this last consideration, language acquisition, is a most important component of an effective auditory training program. Due to the nature of the handicap, hearing impaired children are impeded in vocabulary and language development. By school age, the language deficit can range up to four years retardation, depending upon the age of onset and the severity of loss.

It was with these criteria in mind that we submitted a prospectus of a Title VI–B grant in the State of Missouri. It was proposed to begin a self-initiated sequential auditory training program for the students in the hearing impaired classes of the North Kansas City School District. The purpose was to increase each student's ability to effectively utilize his residual hearing through the use of programmed materials in self-contained auditory training units.

The specific behavioral objectives were as follows:

1. By the end of the 1972–73 school year, the hearing impaired children assigned to special classes would develop the ability to immediately recall 7 word sentences.
2. By the end of the school year, 66⅔ percent of the hearing impaired students assigned to our special classes would develop the ability to recall a 5 word sentence with a S–R latency period of 5 seconds.
3. By the end of the school year, 80 percent of the hearing impaired students assigned to our special classes would discriminate auditorily three-syllable words.
4. By the end of the school year, 80 percent of the students assigned to our special classes would achieve one and one-half years in language growth.

The instruments used to evaluate the students' growth were the Auditory Discrimination and Memory Span Test, and the Utah Test of Linguistic Abilities. The students were evaluated in these three areas:

1. Auditory Memory Span
2. Auditory Discrimination
3. Language.

TECHNIQUES EMPLOYED IN THE PROJECT

The instructional paradigm of the program can be sub-divided into these areas: (1) techniques of behavior modification, (2) programming of instruction, (3) techniques in parental counseling.

Techniques of behavior modification

Feedback as to the appropriateness of the student response was provided immediately with the use of an instructional machine. With each instructional item in the lessons, the student selected his response from a closed set on a response sheet. Facing the array of receptables on the instructional machine, the student inserted a probe with coordinates corresponding to the item number and response selection. A red light indicated the correctness of his response.

A chart was also kept by the student and teacher which indicated the child's progress on a day-to-day basis.

These techniques served to motivate the child to work toward criterian levels of performance and to insure a minimal level of redundancy in the lessons.

However, as the year progressed, it became apparent that the red light, as a reinforcer, did not have the staying power we had hoped it would have. A new method or contingency system was needed.

On a trial basis, we constructed a marble dispenser and modified one instructional machine to include the dispenser in its electronic system, for every correct response a marble was dispensed. A token system was outlined for the students whereby they would receive some type of reward for every 10 marbles they had accumulated.

The token system was utilized for the remainder of the year (2½ months time lapse). It increased the motivational level of the students very significantly and served to provide the needed incentive lacking in the previous mode of reinforcement. (Refer to discussion on the evaluation for a depiction of the significant rise in achievement as a result of the token system).

Programming of instruction

The following outline is a schemata of the sequential program.

1. Discrimination of GROSS NON-SPEECH SOUNDS.[1]
    a. Multisensory approach.
    b. Phase out visual and kinesthetic clues.
    c. Unisensory—auditory modality.
2. Discrimination of FINE NON-SPEECH SOUNDS.[2]
    a. Multisensory approach.
    b. Continue to provide practice in auditory discrimination of non-speech sounds.
    c. Phase out visual and kinesthetic clues.
    d. Unisensory—auditory modality.
3. Discrimination of GROSS SPEECH SOUNDS.[3]
    a. Simple sentences.
        1. Multisensory approach.
        2. Continue to provide practice in auditory discrimination of fine non-speech sounds.
        3. Phase out visual and kinesthetic clues.
        4. Unisensory—auditory modality.
    b. Phrases.
        1. Multisensory approach.
        2. Continue to provide practice in auditory discrimination of simple sentences.
        3. Phase out visual and kinesthetic clues.
        4. Unisensory—auditory modality.
    c. Words.
        1. Multisensory.
        2. Continue to provide practice in auditory discrimination of simple sentences.
        3. Phase out visual and kinesthetic clues.
        4. Unisensory—auditory modality.

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[1] Example: Discriminate the sound of a truck as compared to the sound of a cow.

[2] Example: Discriminate the sound of a truck as compared to the sound of a jet.

[3] Example: These would be sentences, phrases, and words that would differ greatly in length, rate, and rhythm, intonation and acoustic characteristics.

4. Discrimination of FINE SPEECH SOUNDS.[4]
    a. Simple sentences.
        1. Multisensory approach.
        2. Continue to provide practice in auditory discrimination of gross speech sounds.
        3. Phase out of visual and kinesthetic clues.
        4. Unisensory—auditory modality.
    b. Phrases.
        1. Multisensory approach.
        2. Continue to provide practice in auditory discrimination of gross speech sounds and fine speech sounds (simple sentences).
        3. Phase out of visual and kinesthetic clues.
        4. Unisensory—auditory modality.
    c. Words.
        1. Multisensory approach.
        2. Continue to provide practice in auditory discrimination of gross speech sounds and fine speech sounds (simple sentences, phrases).
        3. Phase out of visual and kinesthetic clues.
        4. Unisensory—auditory modality.

A program of auditory training will be established for each child. Once the pre-test evaluation is completed, the teacher will determine a child's needs as to language skills, auditory discrimination skills and memory skills. A program of auditory training will be tailored to fit the needs of that child. Decisions as to the level of competency of the child and the point of introduction to the sequential program will be the responsibility of the teacher.

Auditory memory.—Each step in the sequential program involved the phasing-in of a progressively longer S–R latency period. An example of how this worked is as follows:

Discrimination of gross speech sounds
1. Simple sentences.
    a. Multisensory approach (The period between the stimulus and the student's response would progressively increase from one second to 20 seconds.)
    b. Continue to provide practice in auditory discrimination of gross speech sounds a S–R latency period of 15 to 25 sounds.
    c. Phase out visual and kinesthetic clues. During this phasing out, initially reduce the latency period to zero seconds then gradually increase it again throughout the task.
    d. Unisensory—auditory modality. Initially reduce the latency period to zero seconds then gradually increase it again.

Throughout the program, this approach would be used. The implementation of the S–R latency period for each child will always be at the discretion of the teacher.

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[4] Example: Discriminate the oral production of the word bear as compared to chair or hair or tear.

PARENT COUNSELING

Involving the parents became a very important facet of our program. As we worked with the children to develop their listening skills, we began to observe that the new skills they were acquiring in the training sessions were not being carried over into their normal everyday activities, which includes the home. We felt that the parents should see what progress their child was making in auditory training so as to raise their level of expectancy and help us in the carry-over process. Through a program of parental visits and demonstrations by their children, the parents were made more aware of how much their child could make use of his own residual hearing. Also, the parents were made more aware of their low level of expectancies relevant to their child's listening and auditory discrimination skills. Time was spent with the parents discussing the techniques they could use to enhance their child's growth in auditory dicrimination skills and bring about a carry-over of those newly acquired skills into everyday activities.

RESULTS

Pre- and post-tests of the Utah Test of Language Abilities, and the Auditory Discrimination and Memory Span Test were administered to the students. Table I indicates the breakdown of the data collected for each student.

Each objective, with the exception of the objective which proposed that each student would develop the ability to recall 7 word sentences, was met or exceeded by the participants of this study.

1. By the end of the school year, the hearing impaired children assigned to our special classes in the North Kansas City School District (13 students) would develop the ability to immediately recall 7 word sentences.

Only one of the 13 participants met criteria on this objective. Table I, in the area of "Auditory Memory," subject 13 is shown as being able to recall 7 word sentences utilizing the auditory modality for input. (Performance of 7 word sentences is indicated on the table by an individual scoring at Level VI or above in the area of auditory memory.) Seven of the 13 participants made progress in this area; 6 of the 7 showing significant growth.

TABLE I.—PRE- AND POST-TEST DATA

Student	Age	Language		Auditory discrimination (percent)		Auditory memory		Growth		
		Pre	Post	Pre	Post	Pre	Post	Language auditory (years)	Disc. auditory (percent)	Memory (levels)
1. PB	6–4	3–10	6–5	27	23	I–0	I–3	+2–7	−4	----------
2. TC	7–5	4–7	6–8	19	20	I–0	I–1	+2–1	+1	----------
3. CG	7–6	4–10	6–5	23	25	I–0	I–1	+1–7	+2	----------
4. WD	7–6	3–6	4–7	12	18	I–0	I–0	+1–1	+6	----------
5. KR	8–4	4–7	6–1	0	33	I–0	II–0	+1–6	+33	+1
6. SD	8–5	4–7	6–6	63	89	I–7	V–6	+1–11	+26	+3–9
7. DL	8–6	4–6	6–3	11	55	I–0	IV–3	+1–9	+49	+3–4
8. MB	8–6	5–6	7–11	65	87	II–7	V–8	+2–5	+22	+3–2
9. MS	9–0	3–8	6–10	35	84	I–0	IV–1	+3–2	+49	+5–2
10. RB	9–4	6–4	8–3	82	96	II–5	V–2	+1–11	+14	+2–5
11. SR	11–6	6–3	9–0	42	77	I–0	V–2	+2–9	+35	+5–4
12. MM	13–1	7–7	12–7	43	56	I–0	IV–2	+5	+13	+4–4
13. JM	14–0	7–7	9–5	89	97	VI–2	VI–8	+1–10	+8	+−8

2. By the end of the year 66⅔ percent of the hearing impaired students assigned to our special classes would develop the ability to recall a 5-word sentence with a S–R latency period of 5 seconds.

Table I in the area of "Auditory Memory" indicates 8 students achieved criteria at Level IV or better. (Level IV indicates that a child was able to discriminate 5-word sentences with a S–R latency period of five seconds or more.)

3. By the end of the school year, 80% of the hearing impaired students assigned to our special classes would discriminate auditorily 3-syllable words.

An item analysis of the Auditory Discrimination Test indicated that every child was able to discriminate at least a few 3-syllable words.

However, at this time we feel that this objective has very little meaning relevant to a significant measure of critical listening skills. A subject's familiarity with words, whether one syllable or 6 syllables, determines his ability to perceive and discriminate at an auditory level. A subject's ability to attend to and select from his total auditory field is considered of more importance than other factors in auditory discrimination.

4. By the end of the school year, 80 percent of the hearing impaired students assigned to our special classes would achieve one and one-half years in language growth as measured by the Utah Test of Language Abilities.

Criteria was achieved by 12 of the 13 participants or 92 percent. As indicated in Table I, there was a range of 3 years 11 months in language growth. Six of the participants progressed in language age as much as 2 years or more, one student, achieved 5 years growth in language ability.

DISCUSSION OF RESULTS

In general, the students were evaluated in these three areas:

(1) Auditory Memory Span.
(2) Auditory Discrimination.
(3) Language.

(Refer to Table I in the area of "Growth" for an indication of the growth of each student made in each area.)

LANGUAGE

We feel that the unusual growth in language for six of the participants may be a little unrealistic. Conceivable reasons for a differential growth of this size would be:

(1) The change in attitude for these students was much greater. During pre-testing, we felt that a number of the students did not test out as high as we had expected. It was observed that their willingness to cooperate during the evaluations was minimal.

(2) The test utilized may not be as valid and discriminative for this type of investigation. In particular, we noticed that the Utah Test of Language Abilities relied heavily upon overt motor responses and memory span in its test items. Memory span was an important part of the objectives for this project. The students were inadvertently trained in an area the language test relied upon to obtain a language age. After making an item analysis of

student 12's pre-and post-language tests, we found that items which required memory span were by and large the items she responded correctly to in the post-test.

Also, it should be noted that this student achieved very significant growth in her attitude toward school and learning.

AUDITORY DISCRIMINATION

Realizing that the instrument used to evaluate this area has not been standardized and that there are no norms where-by to determine if significant growth had been achieved, we must rely on a subjective interpretation of the data collected. The test ranged in difficulty from a discrimination of gross non-speech sounds (environmental sounds) to a discrimination of individual words very similar in phonemic and format patterning. There are a total of 88 items in the test.

We feel that four of the students made no progress in this area. Goal directed gains for the remaining nine students we feel were significant. Upward mobility of 10 points or more on the test in 9 months is making good progress toward a greater use of one's residual hearing. The growth and level of performance by most of the students was much greater than we had originally anticipated. More time and effort will be needed to determine the degrees of growth which can be achieved in the use of residual hearing. Ling has stated, "A major obstacle to developing more effective auditory training programs would be the time and expense involved in preparing sufficient training material to provide the necessary variety of items at each level of difficulty." (Ling, 1971) We concur but would also add that time and expense is necessary if proper goals and objectives are to be determined and the most effective means of reaching these goals and objectives are to be found. Much experimentation with approaches and material is still needed in our endeavor to formulate an effective auditory training program.

AUDITORY MEMORY SPAN

Again we find the same four students who did not make progress in auditory discrimination, not making any gains in auditory memory. Eight of the remaining nine made what we feel is very significant progress. This portion of the test contained six levels ranging in sentence length from one word to seven words at each level. The child being tested responded according to an increasing S–R latency period which ranged from 0 seconds to 27 seconds. Eight of the students made gains of 2½ levels or more on the scale.

In our observations of the children this past year, we gave special consideration to anything which involved memory span. We have concluded from these observations that:

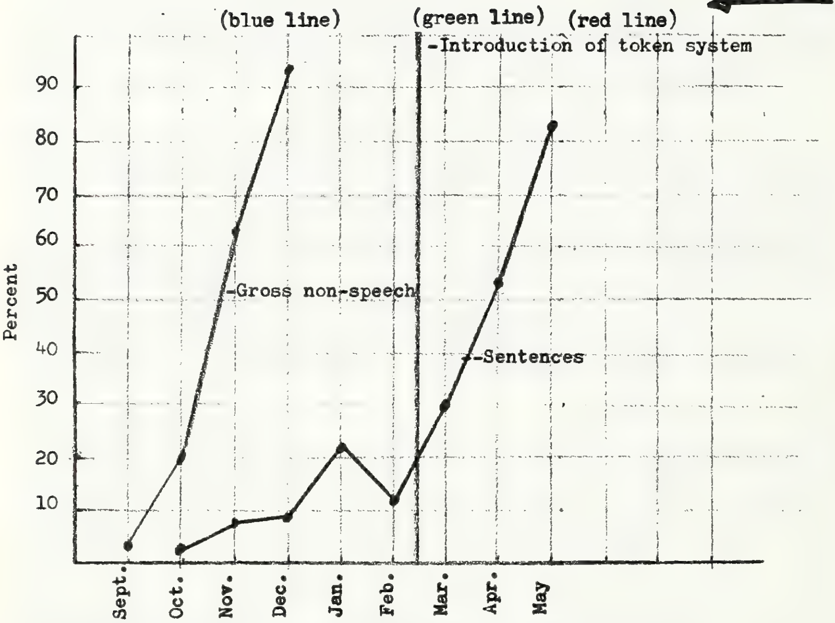
1. The child's ability to remember auditory signals developed in relation to his growth in auditory discrimination. As his ability to discriminate increased, as his language expanded, his ability to recall auditory stimuli increased also after progressive increases in the latency period.
2. The development of specific skills of auditory perception enhanced the development of auditory memory span. Procedures to develop auditory memory was not as effective as material which developed skills of auditory perception.

We now realize that this objective was not realistically set. Our work the past year has shown us that even though auditory memory span is very important as a function of audition, its growth is determined by other variables. These other variables or skills are very basic and vital to the development of auditory perception. We feel that the development of these very basic skills will greatly enhance the child's ability to recall longer and longer sentences. However, this is not the place to postulate a complete thesis. It should be sufficient at this time to say that this objective (No. 1) was found to be unrealistic and needs to be developed and objectively met by further research. This area needs to be explored further if we are to make any conclusive statements.

Graphs III and IV depict the growth patterns in non-speech sounds (blue line) and sentences (red line) for two children. The green, vertical line indicates the point-in-time whereby the marble dispenser and token system were introduced. The graphical depiction for these two children is characteristic of the growth patterns all of the students made.

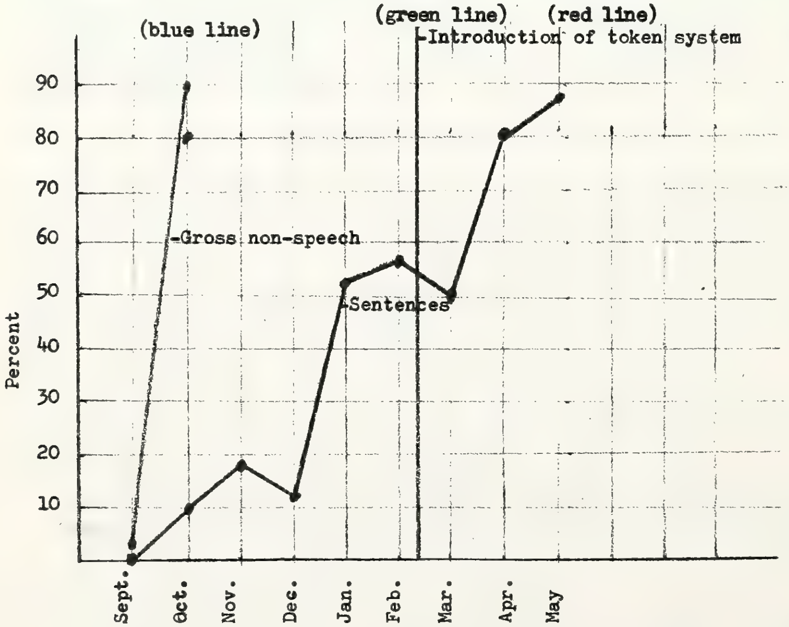
Two observations can be made from these graphs: (1) The period of time needed to learn the non-speech sounds was relatively short. We had not expected the students to move through the phase of the program as quickly as they did. (2) The growth in auditory discrimination was slow and laborious in the beginning. At the time we introduced the new mode of reinforcement an upward swing in growth was very evident. We feel that the use of the marble dispenser and token system on a trial basis proved to be a very significant factor in the success the children achieved. We recognize the importance of having this mode of reinforcement operating on all the training units.

add:



Growth patterns in non-speech sounds and sentences for student number 7 and student number 12 respectively.

add:



CONCLUSIONS

Throughout this evaluation report thus far, we have alluded to many of the strong and weak points of the project. Succinctly stated, the conclusions we have reached concerning the project and our work this past year are as follows:

1. It is very apparent to us that our work in this area has only begun. Our observations and findings indicate a need to further clarify our objectives and goals for a more effective auditory training program.
2. The growth shown by the students in their skills of auditory perception indicates that the direction we are taking in auditory training is of value and worthwhile.
3. The token system of reinforcement and the use of the marble dispenser increased the motivational level of the students significantly. We feel this mode of reinforcement will provide the necessary incentive for the students in the training program. An investigation should be made to determine if there are any instruments which would do a more adequate job in measuring the language growth of hearing impaired children.
4. As a weakness, the project needed better objectives. As a result of what we have learned this past year, more realistic and effective objectives can be made.
5. Also, the instrument used to evaluate language was not adequate in measuring the growth of these children. An investigation should be made to determine if there are any instruments available which would do a more adequate job in measuring the language growth of hearing impaired children.

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A PROGRESS REPORT ON THE DEVELOPMENT OF THE OREGON STATE SCHOOL FOR THE DEAF LANGUAGE ACHIEVEMENT TEST

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Introduction

The language program at the Oregon State School for the Deaf is based on a linguistic developmental approach. Several years ago, the school administration decided to do something about the need to evaluate the language program, and to measure the growth of students' expressive language from year to year. Effort was made to find a diagnostic test instrument to assist in this evaluation.

During the school year of 1970–71, the Stuckless-Marx Test (1966), a language test with established norms on a large deaf population, was administered to 114 students at O.S.S.D. in September and three alternate batteries four times during the year.

It was hoped that this test could be used to measure the increments of linguistic skill of the students. The test results were analyzed by Allen and McCarr and they concluded that the Stuckless-Marx Test was not sensitive enough to measure linguistic growth to such an extent that it could serve as a diagnostic instructional tool. Therefore, it was decided to develop a Language Achievement Test for the school. A test was developed in September of 1971 which was constructed by a teacher who drew on his experience as a language instructor to develop sections to the test that were pertinent to the needs of deaf students.

In October of 1971, this new instrument was administered as a Pre-Test to 176 students at O.S.S.D., in grades 4–12 by the language teachers of each class. The only help given students was in the understanding of the directions. No time limit was set. The testing took two or more 50 minute class periods. Some of the slower students used as many as five language class periods on successive days to complete the test.

In May of 1972, this test was administered as a Post-Test. The Post-Test was identical to the Pre-Test except for the correction of some directions. With almost no exceptions, the population tested in May was the same as that tested in October.

In the process of scoring the October Pre-Test some notable faults were observed. So in April of 1972 a revised instrument was developed which eliminated some items, reduced other items, and expanded some tasks on the test. After the May 1972 Post-Test, the revised edition was developmentally tested on a random section of the test population. This revised edition became the basis for the test.

This year, the Language Coordinator was given the responsibility of continuing work on this instrument to evaluate language growth of children in grades 4–12 attending school at O.S.S.D. with a final copy of this instrument, complete with validity measures to be given to the Title I Project Director and the school administration by June 1, 1973. A team composed of the Project Director, language teacher, language consultant and a programming and statistical consultant developed the strategy to complete this assignment. The test was given the first week in October, 1972 and the last week in April, 1973.

Basic to this strategy was the decision to computerize the data from the completed tests. This allowed programming the computer to provide personal profiles on each section of the test for every person tested, an item analysis to check the discrimination and difficulty of each individual item within the instrument, and validity measures, plus various kinds of comparative information on departments and classes. This wealth of ready information is viewed as having these values: (1) It is of diagnostic value in that it helps answer the questions: "Where is this pupil in the acquisition of language skills, and where should he be going within the language curriculum?" (2) It is a measure of individual growth through the school year. (3) It will assist teachers in evaluating their teaching strategies by helping them to answer the questions: "What did I do that worked, and what needs to be improved in my instruction?"

THE TEST INSTRUMENT

The O.S.S.D. Language Achievement Test has the following eleven sections:

A. Identification of words in a list as nouns, verbs, either, or neither.

B. The ability to select words for elliptical sentences based on the function of the word class and the semantical demands of the sentence.

C. Recognition of when words do form a correct question, or an incomplete thought.

D. The expressive use of prepositions by the student.

E. The expressive use of pronouns from a list provided to the student.

F. The expressive use of "*to be*" and "*to have.*"

G. The identification of antecedents to the pronouns in a story.

H. The expressive use of listed reflexive pronouns.

I. The concept of correct word order in a sentence.

J. Recognition of common errors in sentences and ways to correct them.

K. The ability to combine given groups of kernel sentences into single or multi-transformed sentences.

ILLUSTRATION OF TEST AND RESULTS

Illustration of Section A

The directions to Section A, and 10 out of 25 words used in the test are as follows:

A. Underline Verbs. Example: a) carry
Circle nouns. Example: b) boy
Some words can be a noun or a verb. Example: dress
Cross out words that are not nouns and not verbs. Example: ~~in~~

1. bird
2. rock
6. help
7. hard
11. quickly
12. family
16. car
17. see
21. write
22. when

Now compare the profiles for Section A of a student for Fall and Spring.

Student 136
4th grade girl

	total	noun	verb	both	neither
Possible Points	34	14	15	9	5
Spring Test	24	7	13	0	4
Fall Test	11	9	2	1	0
Gain or Loss	+13	-2	+11	-1	+4

In the Fall she achieved a total of 11 points for Section A. Nine of these points were gained by properly identifying 9 of the words as nouns, two words she correctly identified as verbs, one word she indicated could be both a noun and a verb; but she did not identify any of the five words that correctly would have been labeled as neither a noun nor a verb. (The both column does not figure into the points for the total for it will have been already recorded under noun and under verb).

A look at this profile with other available data in the Fall might have suggested to her teacher that this student's ability to identify the nouns in this list is above average for fourth and fifth graders attending O.S.S.D. On the other hand she was very weak in recognizing the words that are neither a noun or a verb. So teaching strategies could be designed to strengthen her areas of weakness.

In the Spring Post-Test this same student achieved a total of 24 out of a possible 34 points. She properly labeled 7 words as being nouns, 13 words as being verbs, but did not identify any of the words as being both nouns and verbs, whereas she identified four out of the five words that were neither a noun nor a verb. So she gained a total of 13 points in this section.

Whatever strategies were used by the teacher, the learner showed progress in total points, a great gain in recognition of the verbs, and words that were neither nouns or verbs. The Spring profile shows that the concept of a word being used as a verb and also having a noun usage has not yet been learned at all.

Student 51
9th grade boy

	total	noun	verb	either	neither
Possible Points	34	14	15	9	5
Spring	32	12	15	8	5
Fall	25	7	13	2	5
Gain or Loss	+7	+5	+2	+6	0

The following section presents the profiles of Section A for student 51. In the Fall this 9th grade boy achieved a total of 25 points: 7 in recognition of nouns, 13 in recognition of verbs (he recognized two of the words that were both nouns and verbs), and five points for recognizing all the words that were neither a noun nor a verb. The diagnostic value of such a profile would indicate that the student has his strength in the recognition of verbs from the list and the words that are neither nouns nor verbs; but there are seven words among the verbs that can be both nouns and verbs that he missed.

The Spring profile reveals that progress was made. His point total is up to 32. Five points were gained in recognition of nouns, and he made a perfect score in identifying the verbs and words that were neither nouns nor verbs. Thus this teacher could evaluate her teaching strategies as having been successful with this student.

Illustration of Section B

In Section B the student is presented with a list of 40 words. All but five of these words were taken out of the story which is presented in elliptical sentences. A double value is placed on each correctly filled blank. One point is given if the correct word class is chosen: (NN) noun, (VB) verb, (AJ) adjective, (PN) pronoun, (AX) auxiliary, (DT) determiner, (CJ) conjunction, (PR) preposition, and (AD) adverb. A second point is awarded if the word correctly meets the (SM) semantics of the sentence. The directions for the section, the word list, and the first paragraph in the story are presented below.

B. Write your answers in the blanks. Use these words only one time.

a
I
go
so
do
of
it
the
she
was
but
and
had
her
but
suddenly
drowning
quickly
yelling
swimming
warm
replied
thank
swim
asked
water
shine
saw
fine
help
o.k.
near
deep
swim
said
girl
into
wet
suit
the

A boy was walking __________ the lake. ________ sun was out, _____ it was _______ __________ sunny day. The boy wanted to _____ for a ______, ______ he ________ forgotten his swimming suit.

Student 135
4th grade girl

	T	N	S	V	S	A	S	P	S	A	S	D	S	C	S	P	S	A	S
Possible	B	N	M	B	M	J	M	N	M	X	M	T	M	J	M	R	M	V	M
Points	70	3	3	10	10	5	5	3	3	2	2	3	3	4	4	3	3	2	2
Spring	60	3	3	10	10	4	4	3	3	2	2	2	2	3	3	2	2	1	1
Fall	34	2	1	9	4	2	2	2	2	1	0	2	2	2	2	1	0	1	0
Gain	+26	1	2	1	6	2	2	1	1	1	2	-	-	1	1	1	2	-	1

Student 135 was a fourth grade girl. Her Fall score was a total of 34 for this section. Her strength was in the recognition for the need for verbs, in nine out of ten blanks, but she used only four of them with semantical correctness. For an entering fourth grader she was doing well with the nouns (2 out of 3 correct), adjective (2 out of 4). The Spring profile shows a pleasing across the board growth. The best gain was in the recognition of the semantical demands of the context in choosing the verbs. (In that part, she went from 4 out of 10 to a perfect score.) Otherwise there was a wide range of improvement with one or two points being gained in most word classes.

Student 90
7th grade boy

	T B	N N	S M	V B	S M	A J	S M	P N	S M	A X	S M	D T	S M	C J	S M	P R	S M	A V	S M
Possible Points	70	3	3	10	10	5	5	3	3	2	2	3	3	4	4	3	3	2	2
Spring	45	2	1	7	7	3	3	2	2	1	1	2	2	2	1	3	2	2	2
Fall	20	2	1	7	2	1	1	0	0	0	0	2	2	0	0	1	1	0	0
Gain	+25	-	-	-	5	2	2	2	2	1	1	-	-	2	1	2	1	2	2

Student 90 was a seventh grade boy. His Fall profile reveals that he sensed the need for verbs in the right places, in that he correctly identified 7 out of 10 places where a verb was needed, but he had difficulty selecting which verb was right for the context, having only 2 verbs meeting the semantics of the sentence. His other strength was in the usage of determiners in that he wrote in the correct determiners in two out of three possible choices. His glaring areas of weakness were in the recognition of the need for pronouns, auxiliaries, conjunctions, and adverbs, where he had no correct response. His Spring profile indicates that he doubled his skill in this section, 45 total points compared to 20 in the Fall. The single greatest gain was in choosing the right verb according to context, going from 2 to 7 points. Improvement is shown with adjectives, pronouns, auxiliaries, conjunctions, prepositions, and adverbs. The teaching methods employed this school year with this student should be continued in the next school year.

Student 32
10th grade boy

	TB	NN	SN	VB	SM	AJ	SM	PN	SM	AX	SM	DT	SM	CJ	SM	PR	SM	AV	SM
Possible Points	70	3	3	10	10	5	5	3	3	2	2	3	3	4	4	3	3	2	2
Spring	60	3	3	10	8	5	5	3	3	2	2	3	3	2	1	3	2	2	0
Fall	48	2	1	9	6	5	5	3	3	2	2	2	1	1	1	2	1	1	1
Gain	+12	1	2	1	2	-	-	-	-	-	-	1	2	1	-	1	1	1	1

Student 32 was a ~~tenth~~ 10th grade boy, at the medium range of the high school boys in rank order. His Fall profile showed a total of 48 points with perfect scores on the adjectives, pronouns, and auxiliaries plus a good score on the verbs. This student should not have wasted any time on drill or study in the areas of his strengths during the year. The Spring profile shows the learner adding perfect scores with the nouns, and determiners while retaining the perfect scores he had in the Fall. This Spring profile points out that conjunctions and adverbs need some concentrated study next year.

Section K has seven groups of kernel sentences. The directions are to join each group of sentences into one correct sentence. This gives an opportunity of evaluating the expressive use the learner has of (CC) coordinating conjunctions, (SC) subordinating conjunctions, (AC) adverbial clauses, (RC) relative clauses, (PT) participles, (TP) passive transforms, (NM) noun modifiers, plus (CP) capitalization and (PN) punctuation. The scoring is weighed to give an increasing number of points for the increasing sophistication of usage: one point for a coordinating conjunction and four points for a noun modifier. One point can be taken off in a sentence for incorrect capitalization and one point off for incorrect punctuation (but not more than one point for each per generated sentence).

The total points for K are the only monitor to the number of correctly constructed sentences. This profile reveals only the kinds of connectors or transforms that were attempted. However, this does make the profile a very valuable diagnostic tool.

Item 6 in Section K lists the following sentences to be joined together:

The game was finished.
The boys went to the pizza parlor.
The boys were hungry.
The boys bought two pizzas.
The pizzas were huge.

Following are sentences generated by three students on Item 6 for the times indicated. The connectors are labeled. Then the students profile for K is given.

```
                  (AC)                          (NM)
Student 8 Spring: When the game was finished, the hungry boys went

                                      (CC)             (NM)
                  to the pizza parlor and ordered two huge pizzas.
```

Student 8
11th grade boy

	Point Value											
			1	2	3	3	3	4	4	4	1	1
	Poss.	TK	CC	SC	AC	RC	CL	PT	TP	NM	CP	PU
Spring	65	44	5	0	4	1	1	1	1	4	7	4
Fall	65	36	4	11	2	3	1	0	1	5	7	2

Student 8 is an eleventh grade boy that passed the Gallaudet entrance exam. Since both his Fall and Spring responses to Item 6 were very similar, we exhibit only his Spring response. A look at his profiles shows a full range of usage attempted. One generated sentence in the Fall was incorrect. His total score can only be increased by using the more sophisticated connectors possible for each group of sentences. This student received the highest point value for K among the population tested.

(CC)
Student 54 Fall: The game was finished and the boys went to the pizza

(CC) (O)
parlor and were hungry, the boys bought two pizzas,

(CC)
and it were huge.

(CC) (RC)
Spring: The game was finished and the boys who were hungry

(CC) (RC)
went to the pizza parlor and bought two pizzas that

were huge.

Student 54
9th grade girl

	Point Value		1	2	3	3	3	4	4	4		
	Poss.	TK	CC	SC	AC	RC	CL	PT	TP	NM	CP	PU
Spring	65	31	6	0	0	10	0	0	0	0	7	2
Fall	65	9	9	3	0	1	0	0	0	0	7	4

Student 54 is a ninth grade girl. In the Fall she made exclusive use of coordinating and subordinating conjunctions except one correct sentence with a relative clause. It is obvious from the Spring profile that she has gained good command of the relative clause, increasing usage from 1 to 10. Her Spring response to Item 6 contains two varied relative clauses. One point was subtracted in that sentence for lack of commas. No points were allowed for the Fall response because of some omissions. Three of the Fall sentences generated for K did not receive points, but in the Spring all seven generated sentences earned points. Punctuation needs attention since 5 out of 7 sentences had punctuation errors.

Student 70 Fall: The game was finished $\overset{\text{(CC)}}{\text{and}}$ the boys went to the pizza
parlor, $\overset{\text{(CC)}}{\text{but}}$ they were hungry, $\overset{\text{(CC)}}{\text{and}}$ they bought two
pizzas $\overset{\text{(CC)}}{\text{and}}$ were huge.

Spring: The game was finished, $\overset{\text{(AC)}}{\text{when}}$ the boys went to the
pizza parlor, $\overset{\text{(0)}}{\text{they}}$ were hungry, $\overset{\text{(AC)}}{\text{then}}$ they bought
two $\overset{\text{(NM)}}{\text{huge}}$ pizzas.

Student 70
6th grade boy

	Point Value		1	2	3	3	3	4	4	4		
	Poss.	TK	CC	SC	AC	RC	CL	PT	TP	NM	CP	PU
Spring	65	15	5	4	2	4	0	0	0	1	7	4
Fall	65	12	14	2	0	0	0	0	0	0	5	7

Student 70 is an eighth grade boy. The response given to Item 6 in the Fall was one of two sentences that did not receive points for reasons obvious to the reader. In the Fall his usage was limited to coordinating and subordinating conjunctions. His Spring sentences show a partial shift from exclusive use of conjunctions as connectors to some use of adverbial clauses, relative clauses, and a noun modifier. However, the point total did not increase much due to three things: (1) three sentences had punctuation errors (3 points off), (2) because he is not yet fully competent in handling the connectors taught, and (3) he did not provide all the connectors as illustrated by observing his response where he failed to provide a connector between "pizza parlor" and "they were hungry." This student did spontaneously express new concepts taught during the year.

RELIABILITY AND VALIDITY OF TEST INSTRUMENTS

Item Analysis

Item analysis is a statistical procedure used on each item of a test to determine whether or not the item is discriminating in student performance. The first blank in Section B is used as our illustration. That sentence reads, "A boy was walking _______ the lake." The preposition "near" was the semantically correct response. The data provided by the computer looked like this:

		ANSWERS SELECTED									
Item-Sec.	Group Name	NM	VB	AJ	PN	AX	DT	CJ	PR	AD	no
B 1 PR	Total	6	1	3	0	2	10	1	112	2	5
	Low	6	1	2	0	0	8	1	29	1	5
	High	0	0	0	0	0	2	0	46	0	0
		Correct	Incorrect								
B 1 SM	Total	65	72	0	0	0	0	0	0	0	5
	Low	8	40	0	0	0	0	0	0	0	5
	High	39	9	0	0	0	0	0	0	0	0

Item-Sec.	Group Name	Group Size	Number Right	Percent Right	Diff. Index	Discr. Index
B 1 PR	Total	142	112	79		
	Low	53	29	55	75	41
	High	48	46	96		
B 1 SM	Total	142	65	46		
	Low	53	8	15	48	66
	High	48	39	81		

The high group and low group is determined by taking the people that fall in the upper 27% and the lower 27% of the bell-shaped curve of total score distribution.

A look at answers selected shows that the wide range of incorrect responses and no responses mostly were made by the low group. Only two people in the high group failed to pick a preposition as the correct response, and those two chose determiners.

The Difficulty Index is arrived at by adding the percentage right of the low group with the high group and dividing by 2. (B 1 - PR: $\frac{55 + 96}{2} = 75$, and B 1 - SM: $\frac{15 + 81}{2} = 48$). The Discrimination Index is derived by subtracting the percentage right of the low group from the percentage right of the high group. (B 1 - PR: 96 - 55 = 41, and B 1 - SM: 81 - 15 = 66). A high Difficulty Index score means the item is easy; whereas the higher the Discrimination Index, the better the item discriminates between high and low groups. There was greater discrimination between the high and low groups on the semantics (choosing the right word for the context) than picking the word class preposition. This is as would be expected.

This illustrates how each one of the 328 items on our test was analyzed for discrimination in both the Fall and Spring. Our strategy team scrutinized all the data, and all 328 items were found to be descriminating between the high and low groups.

Reliability

The data was analyzed for reliability by using the Product-Moment Correlation Coefficient (PMCO) to determine the extent of the relationship between Fall (Pre) and Spring (Post) total test scores of the 141 students. The relationship between Fall and Spring was correlation coefficient of .938 with 139 degrees of freedom.

Validity

The validity measure was made by comparing the Spring Post-Test results with the Spring scores that 54 students had received on the Stanford Achievement Test in the areas of paragraph meaning, spelling, and total language score. This test was completed by the students approximately one week after they completed the O.S.S.D. Language Achievement Test. The results were as follows:

	Cor. Co-ef.
Spring Language Test to Stanford paragraph meaning	.958
Spring Language Test to Stanford spelling	.801
Spring Language Test to Stanford total language score	.763

These scores indicate that our School Language Achievement Test has a high correlation with the external measure that was available to us.

WHERE DO WE GO FROM HERE?

The strategy team has concluded that we have the kind of instrument that the school administration wanted to find, in that this instrument apparently is sensitive to measuring small changes in the written language of deaf children. We also concluded from a preliminary review of its data that we may be able to obtain similar results by splitting each section of the test in half for use as a Pre-Test and Post-Test, with each of the split halves still passing the reliability and validity criterion. A split half reliability will be computed in order to determine the necessary revisions to maintain over-all test reliability.

This coming school year the test instrument will be refined and administered to a larger sample. In addition, staff time will be allocated to correlate the test with the school curriculum guide so that areas of weakness on an individual profile can be pinpointed to the coded behavioral objectives in the curriculum. This will expedite individualized instruction and prescriptive teaching in language for each learner in our Intermediate and High School Departments.

SERVICES TO DEAF-BLIND CHILDREN IN MICHIGAN—SLIDE PRESENTATION WITH TAPE PRESENTATION

Produced by Sandy Skubick, project assistant, Tim Skubick, Barry Karp and Don Kemp, Services to Deaf-Blind Children, Michigan

[Music 4/4]
Wake up sunshine
Open up your sleepy eyes for me.
Can't have you hiding.
I've been waiting all the night
People waiting for the light
Sunshine, sunshine.
[Music]
Wake up sunshine
Let me feel your warm sunlight on me.
Can't have you hiding.
That was long and night was cold
But today you're one day older.
Sunshine, you make my life sunshine.
[Music]
You know I'm talking to you.
I know you're knowing it too.
So just stop hiding your face
Just open your eyes to smile your smile
I'm talking to you.
[Music]
Wake up sunshine
Oooh it's good to have you here with me.
Can't have you hiding.
Can't imagine what I'd do, but feels too lonely without you.
Sunshine, sunshine
You've got to wake up girl and face the day ahead.
[Music 3/4]

These are the deaf-blind children of Michigan. For the next few minutes we'll see the people and programs designed to help these children and their families face the day ahead.

The Midwest Regional Center is the administrative and organizational agency which promotes services to deaf-blind children through state departments of education and other public and private facilities. The Center, located in Lansing, Michigan, is not the source of all services. It petitions for federal funding and encourages the development of services in each of the five midwestern states. Included are Illinois, Indiana, Ohio, Michigan and Wisconsin.

(Music)

The professionals in the regions are servicing and looking for youngsters like those shown here. Most, but not all, display the typical "rubella syndrome;" congenital cataracts; small frail bodies; hearing impairments, heart problems and tactile defensiveness. They are frequently difficult infants who are hard to feed. They may not sleep well. They have an undifferentiated cry and are not toilet trained.

As a result of the 1963–65 nationwide rubella epidemic a specific act of Congress established funding for 10 Regional Centers for services to an estimated 30 thousand children all affected by German measles.

Technically known as Title VI Part C of the 1968 Elementary and Secondary Education Act, the Centers, including the one in the Midwest, were charged with 3 basic goals:

[Music.]

Number 1—comprehensive diagnostic and evaluative services through which each suspected deaf-blind child is to receive ongoing assessment; 2. programs of education, adjustment, and orientation staffed with appropriately trained personnel and adapted to the individual child's potential; 3. effective consultive services for parents, teachers, and others toward the understanding of deaf-blind children. Centers may also provide for research, innovation or demonstration of services, training of personnel, dissemination of information and construction.

[Music.]

The Michigan Advisory Committee on Services to Deaf-Blind Children meets several times each fiscal year. The Committee is chaired by Murray Batten, State Director of Special Education, and it addresses itself to 5 main functions: Assessment and interpretation of needs and available resources for the deaf-blind in Michigan; Recommendation of policy positions and suggestion of strategies and priorities for action; Interpretation of the Center's work to the public; Assistance in the development of program planning and project proposals, and help in the assessment of Center activities. The members represent a wide variety of professional disciplines: public health, mental health, special education, rehabilitation, social services, and teacher training. They represent the key local, state and federal agencies involved with the deaf-blind. Parent membership is currently being solicited. Your interest and inquiries should be directed to the Recording Secretary, Sandy Skubick.

Educational needs of the deaf-blind need not be different than those for any other children. All Michigan programs strive toward the ultimate goal of helping children become independent contributing members of our society. However, the degree to which this is achieved varies with each child. Because of their combined hearing and visual impairments, these youngsters are congenitally denied most early learning experiences. In addition many children as infants resist the close physical contact which leads to strong emotional bonds with their parents. These factors, along with the overlay of additional handicaps such as mental retardation, serve to isolate the children from the daily stimulation of his environment. As a result most deaf-blind children develop numerous self-stimulating habits and mannerisms. The task of educational training programs, therefore, is to impose a strong consistent pattern of appropriate stimulations to develop self-help and communication skills. Daily routines are critical with consistent meal times, toileting opportunities and sleeping schedules. The basic skills of eating and dressing become major performance objectives. Motor skill instruction offers a child experiences he has usually not encountered while developing muscle strength and awareness of himself and his environment. These provide a learning base for more advanced skill development. A deaf-blind child must learn through all his senses. Residual hearing and vision must be stimulated. This means each child must learn to tolerate his prescribed glasses and hearing aid as soon as possible. Smell, touch and taste are also utilized in daily self-help experiences.

Communication in all its forms is based upon imitation. A child learns first to match and move his body the same way another person does. Most deaf-blind children, even though they have enough residual vision, do not imitate until they have received months or even years of additional stimulation. They learn first to simply move with another person. This is called "co-active movement". When a youngster begins to imitate his own movements and can watch and follow more complex exercises, he may go on to more formal communication skills including the use of pictures and words. Most youngsters resist this new input. They must learn to tolerate reasonable expectations and incorporate these activities with a sense of enjoyment.
[Telephone ring.]

"Midwest Regional Center, Sandy Skubick speaking."

"Hello my name is Alice Cronk. I read in the County Health Bulletin that you deal with deaf-blind children. Is that right?"

"Yes, I'm interested in those kids with both the vision and the hearing impairments. Can I help you"?

"I hope so. I just visited a family with a little boy who has a vision problem and, ahh, I think he may have a hearing loss too."

"Well there are a variety of things we should explore. Can we try to meet next Tuesday to first discuss the case and maybe make a home visit..."

Sandy Skubick is the Project Assistant for Services to Deaf-Blind Children in Michigan. She is employed by the Michigan Department of Education to provide consultative services to parents and professionals concerned with deaf-blind youngsters. After a referral such as this, the Project Assistant coordinates a home visit involving county health nurses and Intermediate School District personnel. They may lead to a comprehensive diagnostic evaluation of the suspected deaf-blind child. The Project Assistant must first determine through the diagnostic evaluation the extent of the child's combined hearing and visual impairments. Many children, through their family physicians, have already been referred to opthalmologists, heart specialists, and psychologists, but a hearing evaluation is often not included.

The comprehensive exam may include a dental check up, physical therapy, and occupational therapy. The hearing test will be conducted by an audiologist. In addition an otologist, nutrition expert, social worker, psychiatrist, a pediatrician, and a pediatric neurologist may render their expertise as part of the comprehensive evaluation. By dealing with agencies which demonstrate such expertise with deaf-blind children such as the Institute for Study of Mental Retardation and Related Disabilities, an integrated assessment is often obtained with the first time. These services are paid for by various agencies including Michigan Services to Crippled Children, individual family health insurance, private agencies, and the Midwest Regional Center. If indeed the comprehensive exam confirms the dual vision and hearing problem, the Project Assistant continues to seek an educational training program. If the youngster is not deaf-blind, the Project Assistant refers him or her to the Intermediate School District Director of Special Education. Dual handicaps established, the Project Assistant through discussions and confirmation with the family, the referral agent and school administrator will attempt to locate an appropriate program for the child.

There are 5 programs currently serving these youngsters in Michigan. They offer a variety of services for the deaf-blind child.
[Music.]

Here at the Plymouth State Home and Training School 14 children between the ages of 5 and 21 are served. The facility located in Northville, Michigan has become the service center for deaf-blind retarded children who benefit from a program beyond general institutional services.

[Music.]

This designation as the service center for deaf-blind retarded youngsters was a major development toward providing intensive treatment for the institutionalized deaf-blind youngster.

[Music.]

Housed at Ann Sullivan Hall, this program is unique in Michigan because it offers complete diagnostic services along with residential treatment within the same facility. The Program Director is Dr. Nancy Bryant. The professional staff includes a Title I Specialist, 2 Physical Therapists, an Occupational Therapist, a Speech Therapist, a Motor Skills Specialist, and a Mobility Specialist. For some deaf-blind children the Sullivan Hall program has provided sufficient basic skills to gain entry into other programs across the state.

Penrickton Center for Blind Children is in Taylor, Michigan, a residential facility offering instruction in basic self-help skills such as eating, walking, toilet training, and beginning auditory and visual stimulation. Ms. Vicki Knapp is a trained teacher of the deaf-blind and she coordinates instruction for 9 deaf-blind children. The facility overall serves a total of 25 multi-handicapped blind children between the ages of 3 and 12. It is a private agency supported through contributions from service organizations, clubs and individuals.

[Music.]

A full time licensed practical nurse and a visiting physical therapist complement the instruction at Penrickton. Child care workers complete the offering to parents and children. The Director of Professional Services is Mr. Neal Freeling.

At the Marquette school in Muskegon, Michigan, Ms Cheryl Schadt is an instructor for 4 deaf-blind children all within the Title VI Multi-Cap Program. During the day these youngsters receive her direct services. Additional services may come from a speech therapist, an occupational therapist, a teacher of the hearing impaired, a social worker and specially trained paraprofessionals. For two of the children additional services are also secured at the Muskegon Regional Retardation Center. This operation began in September, 1972, through Title VI–B funds for multihandicapped children. Mr. Ronald Prefontaine is Program Coordinator and it is operated by the Muskegon Public Schools.

[Music.]

> Somebody come and play.
> Somebody come and play today.
> Somebody come and smile the smiles
>   and sing the song.
> It won't take long.
> Somebody come and play today.

Thirty-two deaf-blind children are currently served at the Michigan School for the Blind in Lansing. Such a program has been offered since 1949, the most long-standing example of state support for services to deaf-blind children. Miss Virginia Wiehn is Program Supervisor of a

16 member staff including 12 trained teachers of the deaf-blind and one motor skills specialist. Two diagnostic teachers and paraprofessionals serve in the Educational Evaluation Assessment Classroom, a unique addition to the overall services to the students. Within this educational diagnostic setting, complete medical and social assessments are obtained through the ISMRRD in Ann Arbor. These are combined with MSB's teaching expertise to form a complete educational training prescription. The Educational Evaluation Assessment Classroom will consider the application of any deaf-blind child in need of an educational prescription. Within the regular department children between the ages of 3 and 16, having gained basic self-help skills, may matriculate to pre-academic and academic disciplines.

[Music.]

Somebody come with me and sing the
  pleasures in the wind.
Somebody come before it gets too late to begin.
Somebody come and play.
Somebody come and play today.
Somebody come and be my friend and watch
  the sun 'til it rains again.
Somebody come and play today.

The most recent program to develop for deaf-blind children began March 12, 1973, at the Clark School in Dearborn, Michigan. Miss Katherine Aisen, a trained teacher of the deaf-blind, began a program for 5 deaf-blind youngsters from Wayne Intermediate School District. She is assisted by a full time instructional aide. This program is funded through Title IV Part C as a result of cooperation between Wayne Intermediate School District and the Midwest Regional Center and manifests their mutual desire to provide local services to those dually impaired youngsters.

In addition to the 5 programs outlined here, Kent and Oakland Intermediate School Districts have also served deaf-blind children. Each has a trained teacher of the deaf-blind to deliver services to the infants and young children in those areas.

For parents of deaf-blind children the Michigan Association of the Deaf-Blind, which originated at the Michigan School for the Blind in 1972, has now opened its ranks to all parents around the state. The association actively and warmly invites your participation. Chairman is Ms. Sue Miller.

The third major goal of Regional Centers is to provide consultative services to parents, professionals and related personnel. Currently the Project Assistant assists in this function. Increasingly personnel from Intermediate School Districts, county health departments, public and private agencies are responding to this need. Other services promoted by the Midwest Regional Center may include research and demonstration; in-service training of professional and para-professional staff and dissemination of information.

All of these activities critically depend upon federal funding constantly planned, proposed, and promoted by the Regional Center staff. Reflecting the total needs of all 5 states serviced by the Regional Center, funding of proposed needs is then dependent upon federal allocations for education. Because the process is so far removed from direct services, parents, relatives and others are urged to continually notify the Midwest Regional Center Coordinator and individual Congressmen of their desire for optimum service and funding levels.

Many children and youth are not yet identified, evaluated or served in appropriate programs. If you know of any child with a suspected hearing and visual impairment contact your Intermediate School District Director of Special Education and the Project Assistant. Your interest and activity is essential to the initiation and continuation of these services. Write to the Project Assistant for Services to Deaf-Blind Children, Michigan Department of Education, 715 West Willow, Lansing, Michigan 48906.
[Music.]

Listening to you I get the music
Gazing at you I get the heat
Following you I climb the mountain
I get excitement at your feet.

Right behind you I see the millions
On you I see the glory
From you I get opinions
From you I get the story.

Listening to you I get the music
Gazing at you I get the heat
Following you I climb the mountain
I get excitement at your feet.

Right behind you I see the millions
On you I see the glory
From you I get opinions
From you I get the story.

Listening to you I get the music
Gazing at you I get the heat
Following you I climb the mountain
I get excitement at your feet.

Right behind you I see the millions
On you I see the glory
From you I get opinions
From you I get the story.

A SOCIAL LEARNING CURRICULUM—AN ALTERNATIVE FOR THE NONCOLLEGE BOUND STUDENT

Charles A. Burton and Marilyn P. Nugent,
Model Secondary School for the Deaf,
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The title of this paper probably has a different meaning for each of you. For the sake of clarity, let us begin by offering two of our definitions, which are currently being used in the Social Learning Curriculum Project at the Model Secondary School for the deaf. Social learning is defined as, "the acquisition of the concepts and skills requisite for an individual to function within our societal structure."

In order to function within this structure requires that the individual be assimilated. Being able to independently or interdependently satisfy his basic needs within the restrictions imposed by society will generally result in being assimilated. The noncollege bound student, for the purpose of this discussion, is defined as, "the student who because of his low level of academic achievement will ordinarily not be able to continue in an academically oriented postsecondary program."

During the first segment of this paper the rationale and models for the project will be explained. Then there will be an example presented of a prototype activity from the curriculum.

The need for a social learning curriculum was first perceived by the writers when they became acquainted with a 50 year old gentleman who was congenitally deaf. Even though he had been successful as a printer, a trade acquired during his attendance in a state school for the deaf, he related many stories concerning the problems he had experienced in securing housing, goods, services and particularly in securing assistance in dealing with marital problems. He repeatedly stressed to the writers the need for schools for the deaf to better prepare their students to deal with these problems. It became increasingly clear that the time and energy which he had expended in securing the basic necessities for survival and accommodating to societal demands had left little if any time or energy for pursuing other goals.

As our social contacts with deaf adults expanded, the same problems were verbalized by deaf adults of varying ages who had not attended college. As one might expect, the college educated or academically successful secondary graduates reported that they experienced considerable inconvenience in securing these necessities, but that they did not offer major problems. It is reasonable to assume that the academically successful segment of the deaf population could more effectively confront these problems because of their acquired fluency in some mode of standard English and broader general knowledge.

Porter's revision of Maslow's theory of human needs presents an interesting dilemma with regard to the above stated problems to those who would prepare the individual to secure employment, housing, goods, and services within the societal structure. (Sergiovanni, Thomas, and Starratt, 1971)

It becomes apparent in Figure I that the problems mentioned above are all concerned with fulfilling the human needs on the first level of the hierarchy. An assumption basic to Maslow's theory is that motivation for fulfilling the needs for each level of the hierarchy is present only after the lower level needs have been fulfilled and that no motivation is present for a level above which the needs have not been satisfied.

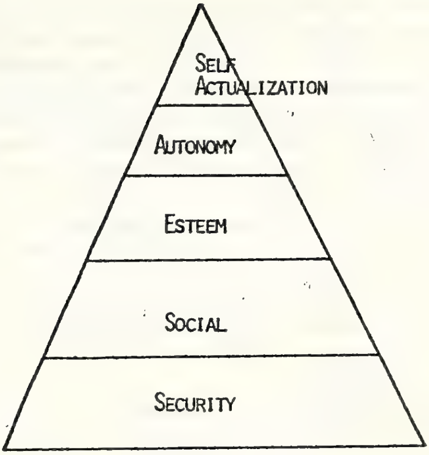

FIGURE 1

Maslow's hierarchy presents an interesting dilemma for the curriculum designers. The population for whom the curriculum is being designed has all the basic needs on the first level of the hierarchy provided for them by their parents, an institution and/or a combination of both. Therefore, according to Maslow's theory there will be a motivational void for acquiring the skills and concepts requisite for satisfying these needs independently. The youngster having his lower level needs satisfied for him is motivated toward and striving to satisfy his needs within the social and esteem levels of the hierarchy. The curriculum designer on the other hand is attempting to structure learning activities geared toward acquiring skills and concepts requisite for satisfying the lowest level needs—thus the dilemma.

In an attempt to analyze this dilemma more closely, one of the writers prepared a two dimensional chart. The first dimension consists of the five areas of needs: (1) employment, (2) housing, (3) goods, (4) services-survival and (5) services-recreational. The second dimension consists of the skills and concepts an individual would probably possess in regard to each of the five areas of three different age levels: (1) as a young child, (2) as a teenager, (3) as an adult.[1] The chart was developed from the adult age level downward. The criterion used for selection of requisite skills and concepts for the adult level was, "What must an individual know and be able to do in order to secure employment, housing, goods, and services efficiently and without being taken advantage of." The assumption is also made that if the adult individual can efficiently satisfy the lower level needs then he will have more time and energy to expend on satisfying the higher level needs. If the individual is to reach the self actualization or highest level of the hierarchy within his life time, then efficiency in securing the basic human needs is crucial. Therefore, the curriculum should assure that the individual is adequately prepared to efficiently satisfy these needs.

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[1] A working draft of the chart is available upon request by writing to Marilyn P. Nugent, Model Secondary School for the Deaf.

The curriculum for a typical hearing population generally assumes that these skills are acquired incidentally outside the school. However, for a deaf population and particularly the segment of the deaf population who have developmental lags in language acquisition, these concepts and skills are not acquired incidentally. Therefore, the skills and concepts requisite to independently satisfy these needs areas as an adult were accepted as the desired outcomes or objectives for the curriculum.

The teenager level of the chart was analyzed to determine how activities could be structured to capitalize upon the youngsters' motivation to satisfy the social and esteem needs areas while acquiring the skills and concepts needed as an adult. The prototype will indicate how this is being tried. The column identifying the skills and concepts typically acquired as a young child are being used as a resource for developing readiness activities.

The definition of social learning offered earlier focused upon an individual's ability to function within our societal structure. There are two important aspects to this statement when applied to a deaf individual. First, as a deaf person within the societal structure, the individual becomes a member of a definable minority group. While we may be making strides in eliminating some of the disadvantages with which a member of any minority group must contend, many disadvantages and prejudices must be faced daily by minority members. An indication of the extent to which a deaf person might expect to encounter these prejudices is evidenced in a study conducted by Shears and Jensema. (Shears and Jensema, 1969) Ninety-four subjects residing in a middle sized city in California were asked to rank the acceptability of ten anomalies as self afflictions and to complete a social distance rating scale for each of the ten conditions. The rank ordering of self afflictions resulted in deafness having a mean rank of 4.54 with mental illness, cerebral palsy, homosexuality, and mental retardation being less desirable as a self affliction than deafness. The social distance rating indicated that approximately 10% of the sample would marry a deaf individual, 53% would have a deaf friend, 67% would work with a deaf person, 80% would live in the same neighborhood, 95% would speak to a deaf person and 100% would live in the same country with a deaf person.

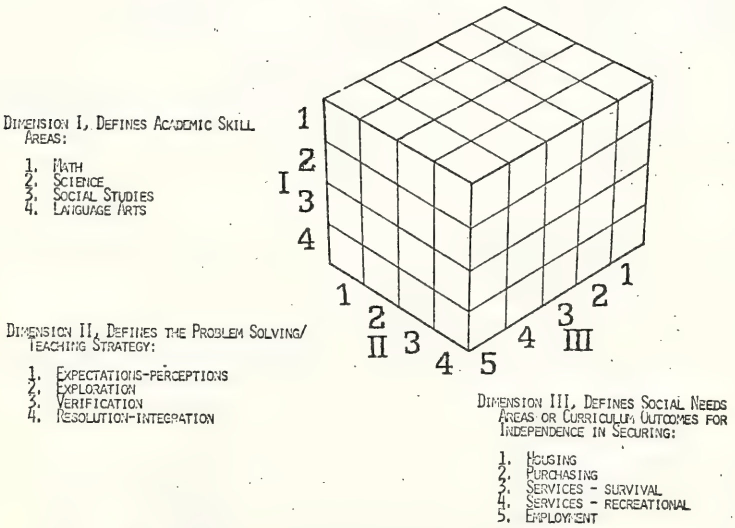
The designer of curriculum for deaf students must consider the psychological and social impact which these prejudices will have upon the young deaf adult as he attempts to realize his potential and fulfill his needs within the societal structure. Second, to survive this impact, the individual must be aware of what to expect as a minority member and especially be aware of what his individual rights are and how to insure that his rights are not violated.

The Social Learning Curriculum being developed at the Model Secondary School for the Deaf relies heavily upon the city as the classroom providing a learning environment within which the student will realistically experience these prejudicial attitudes. The psychological support necessary for surviving negative experiences will be provided by the teacher. Developing interpersonal strategies which will enable the individual to independently cope with prejudicial attitudes will receive a high priority.

The limited sampling of problems encountered by the nonacademically trained deaf adult in satisfying his basic needs, the implications of the above theory of human needs, and the deaf individual as a member of a minority group are offered as the rationale for a social learning curriculum for the deaf.

In order to provide a structure for developing the social learning curriculum, an adaptation was made for the three dimensional cirriculum development model designed for use with the mildly mentally retarded. (Goldstein, 1972) Only the theoretical construct was employed from this model with all three dimensions being redefined to serve the needs of a deaf population. Figure 2 illustrates the model being used for this project.

SOCIAL LEARNING CURRICULUM MODEL, MSSD


DIMENSION I, DEFINES ACADEMIC SKILL AREAS:
1. MATH
2. SCIENCE
3. SOCIAL STUDIES
4. LANGUAGE ARTS
I
1
2
3
4
DIMENSION II, DEFINES THE PROBLEM SOLVING/TEACHING STRATEGY:
1. EXPECTATIONS-PERCEPTIONS
2. EXPLORATION
3. VERIFICATION
4. RESOLUTION-INTEGRATION
1
2
II
3
4
5
4
3
III
2
1
DIMENSION III, DEFINES SOCIAL NEEDS AREAS OR CURRICULUM OUTCOMES FOR INDEPENDENCE IN SECURING:
1. HOUSING
2. PURCHASING
3. SERVICES - SURVIVAL
4. SERVICES - RECREATIONAL
5. EMPLOYMENT

THIS IS AN ADAPTATION OF THE CURRICULUM DEVELOPMENT MODEL FOR A SOCIAL LEARNING CURRICULUM FOR THE EDUCABLE MENTALLY RETARDED CONCEIVED BY THE CURRICULUM RESEARCH AND DEVELOPMENT CENTER IN MENTAL RETARDATION, YESHIVA UNIVERSITY, HERBERT GOLDSTEIN, DIRECTOR, SUPPORTED BY U.S.O.E., B.E.H. PROJECT NO. 6-1368.
ADAPTED BY: MARILYN NUGENT, CHARLES BURTON, WARREN HEISS, CONSULTANT

FIGURE 2

The third dimension of the model defines the social needs areas or curriculum outcomes for independence in securing housing, goods, services and employment.

In order for an individual to function within our societal structure, he must be able to think critically and resolve problems independently. Therefore, the second dimension defines the problem solving/teaching strategy employed as a basis for structuring all learning activities. The first step, "expectations-perceptions," involves the learner and teacher in identifying what the learners' expectations and/or perceptions are concerning a particular topic. "Exploration" is concerned with gathering information to determine if the student's expectations-perceptions are in agreement with the perceptions of others—"verification." The last step in the problem solving strategy, "resolution-integration," focuses on the student aligning the differences which he may have identified during steps two and three, "resolution" or it may be the application of his adjusted expectation or perceptions to a new situation—"integration."

A distinct advantage of this problem solving/teaching strategy is its inherent diagnostic-prescriptive nature. During step one, the teacher and learner are identifying the learner's expectations or perceptions concerning a particular issue or concept. Therefore, no specific concepts or skill levels are required as entrance behaviors for the first step. However, by using this first step as a diagnostic tool, the teacher will be able to structure the learning environment for step two in such a manner as to assure that the needed concepts will be developed. Each of the four steps is conducted by the teacher following the inductive method. The prototype lesson also will illustrate the first step of this problem solving strategy.

The first dimension of the curriculum model defines the academic skill areas of mathematics, science, social studies, and language arts. This dimension provides the structure needed by the curriculum designer to insure that skills will not be overlooked. As the curriculum is being developed the designer can select one block from the model and analyze what should be included by social need area, academic skill area, and upon which step of the problem solving strategy to focus.

Having labored through the rationale and theoretical constructs for a social learning curriculum, let us look at a prototype activity which was developed in accordance with the model.

The following overview of Unit I from the social needs area of Employment is provided in order for the reader to view the prototype activity within the perspective of the total unit.

OVERVIEW OF UNIT I, EMPLOYMENT

The unit on employment is designed to incorporate and build upon the student's knowledge of the working world. Initially the jobs and responsibilites of the family are examined.

The student then investigates jobs in which other MSSD students are involved. Using photographs, student interviews, invited guests, field trips, job descriptions, etc., he is continuously making predictions, investigating and verifying his perceptions about particular forms of employment that interest him.

To meet the terminal objectives of the employment unit, the student will use many sources for information gathering about jobs. He will complete application forms, written resumes, and will participate in several mock interviews. He will compile an employment folder containing all of the above. The unit will expose the student to the social, educational and private agencies that may be contacted to prepare for, seek, secure, and hold full-time employment.

There are 15 activities presently developed for the unit. The activity selected to illustrate the use of the above curriculum model is Activity F. Developmental efforts are presently focused upon language arts and social studies from Dimension I of the model. Math and science skill areas will be incorporated at a later date. Figure 3 illustrates the two cubes from the model which provided the structure for developing the initial activities for the unit.

SOCIAL LEARNING CURRICULUM MODEL, MSSD

DIMENSION I
3. Social Studies
4. Language Arts

DIMENSION II
1. Expectations-perceptions

DIMENSION III
5. Employment

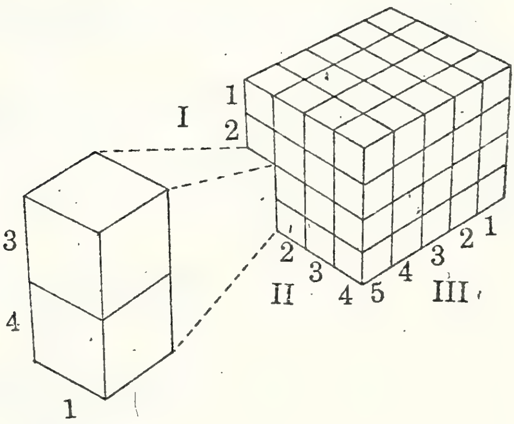


FIGURE 3

TEACHER ACTIONS	TEACHER INFORMATION
1) THE TEACHER PROVIDES EACH STUDENT WITH A POLAROID CAMERA, A FILM PACK, AND 2 FLASH CUBES. TELL THE STUDENTS TO LOAD THE CAMERA. TOMORROW IS OUR FIELD TRIP. YOU WILL BE TAKING PICTURES OF AN EMPLOYEE AT WORK. YOU WILL ONLY HAVE ONE PACKET OF FILM AND TWO FLASH CUBES. YOU WILL WANT TO TAKE ONLY PICTURES THAT YOU THINK SHOW WHAT THE JOB IS REALLY LIKE. WHEN THE CLASS LOOKS AT YOUR PHOTOS, THEY SHOULD BE ABLE TO TELL MORE ABOUT THE JOB THAN THEY ALREADY KNOW.	1) IF STUDENT HAS DIFFICULTY WITH STEP 2 REFER HIM TO POLAROID CAMERA BOOKLET.
2) GIVE THE STUDENTS TIME TO LOAD THE CAMERAS AND TO ASK ANY QUESTIONS ABOUT ITS OPERATION. WHEN THEY ARE FINISHED, HAVE THE STUDENTS PUT THE CAMERAS IN A STORAGE SPACE UNTIL THEY ARE READY TO LEAVE ON THE FIELD TRIP. ONE OF THE THINGS THAT A PHOTOGRAPH WILL NOT EASILY SHOW IS HOW MUCH TIME AN EMPLOYEE SPENDS DOING DIFFERENT THINGS. TO RECORD THIS YOU WILL KEEP A WRITTEN RECORD OF HOW THE PERSON YOU ARE STUDYING SPENDS HIS WORK DAY.	2)-3) DURING DISCUSSION OF TIME STUDY, VERIFY THAT EACH STUDENT CAN TELL TIME AND CAN RECORD APPROPRIATE INFORMATION ON TIME RECORD SHEET.
3) PUT THE TRANSPARENCY ON THE OVERHEAD. THIS IS WHAT THE FORM YOU WILL USE LOOKS LIKE. LET'S FILL IN THIS ONE AS A SAMPLE.	
4) VISIT TO JOB SITE.	4) TEACHER AND/OR AIDE SHOULD BE AVAILABLE TO SERVE AS INTERPRETER IF NECESSARY.
5) STUDENTS ORGANIZE DATA GATHERED DURING VISITATION FOR PRESENTATION TO CLASS, WHEN PHOTOGRAPHS ARE ORGANIZED AND MOUNTED AND TIME STUDY SUMMARIZED. STUDENT WILL DICTATE HIS REPORT TO THE TEACHER OR AIDE. THE STORY WILL BE TRANSCRIBED ON A TRANSPARENCY.	5) WORK AREAS SHOULD BE ARRANGED WITH TAG BOARD, GLUE, CONSTRUCTION PAPER, TRANSPARENCIES, ETC. AVAILABLE FOR PREPARING PRESENTATIONS.
6) STUDENTS PRESENT REPORT TO CLASS.	6) STUDENTS' COMPLETED WORKSHEET 1 SHOULD BE USED FOR EVALUATING OBJECTIVE 5. NEW INFORMATION CONCERNING THE JOB SHOULD BE LISTED ON THE WORKSHEET. EXPECTANCIES WHICH HAVE CHANGED DURING THE EXPLORATION STAGE SHOULD ALSO BE INDICATED.

FIGURE 4

The social studies and language arts skills were then defined for the unit and terminal performance objectives stated. An example of one of the terminal performance objectives concerned with Step 2 of the problem-solving strategy, "exploration" and the social studies concepts related to job classifications and reading skills from the language arts dimensions is:

Given the choice of job classifications the student will select one job and list or or demonstrate a minimum of four different souces or resources for gathering information about the job.

The enabling objectives for Activity F, a copy of which follows, indicates how this activity will contribute to the students' meeting the above terminal objective.

ACTIVITY CARD F—DIMENSION I, SOCIAL STUDIES—LANGUAGE ARTS; DIMENSION II, EXPLORATION; DIMENSION III, EMPLOYMENT

Objectives	Preparation	Media
(1) The student will take photographs which depict at least 4 different job duties of his target employee. (2) The student will keep an accurate 4-hour time study of his target employee, recording employee's activities every 20 minutes. (3) The student will dictate his presentation to the teacher or aide as a language experience story. (4) Students will read each other's language experience stories. (5) Students will communicate an increased knowledge concerning their target jobs.	(1) Prepare the room for using the overhead projector. (2) Written permission from work job site for visitation and to take photographs. (3) Transportation scheduled.	(1) Polaroid cameras, films, flash cubes, overhead, screen, time record sheet, transparency of same, blank transparencies, and markers.

While all six of the learning experiences in this activity involve the student in some form of communication, it is important to point out that any student regardless of his language level will be able to perform the tasks. Photographs, observations, and dictated language experience charts are used. The student will use the products of these efforts in communicating his findings to the class.

Finally, the six learning experiences in this activity are structured to allow the student to gather information and make decisions based upon the information. The role of the teacher is that of guiding, directing, assisting, but not telling. Additionally, the information the student has gathered and organized will be used for individualized reading lessons. The report dictated by the student and transcribed by the teacher will be typed and used as instructional material for improving sight vocabulary and comprehension skills.

Also, although the student is, in reality, beginning to narrow his future occupational choices as an adult by gathering information about the working world and particularly about a specific job, he is also operating within his present needs level of socialization and esteem. This is true because he is examining jobs which peers are presently holding and for which there is an immediate possibility that he may also have an opportunity to secure a similar job.

Since the student is observing a deaf peer functioning in a real job, he will have the opportunity of seeing the reactions of hearing adults to his deaf peers. Activities following this one, will focus on evaluating these reactions and discussions on what he might do when he is in a similar position to help alleviate any of the negative reactions which he has observed.

In summary, this model for a social learning curriculum would appear to be promising for deaf students who have not been successful in more traditional academic programs. It would appear applicable to students from the upper primary level through secondary school.

The curriculum being developed within this model has many things in common with other curricula. The outcomes of the academic skill areas are not changed. The students will acquire skill in mathematical computation, reading, writing and personal skills in communication. The difference being primarily, that these skills are acquired by the student while involved in learning activities which necessitate the student using the skills.

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SPOT (SPECIAL PHONEME OPTICAL TRANSLATOR). A VISUAL SPEECH TRAINING DEVICE

Edgar L. Lowell, administrator, John Tracy Clinic, Los Angeles, Calif.; Virgil B. Elings, associate professor, Physics Department, University of California, Santa Barbara and David T. Phillips, assistant research scientist, Physics Department, University of California, Santa Barbara

When the sense of hearing is deficient, one of the ways we can help the hearing impaired individual to overcome the communication handicap that is associated with deafness is to attempt to substitute other senses for hearing. The challenge to construct devices that will permit another sense to substitute for hearing has intrigued educators and engineers for years. Most of the efforts have been to transform speech into either visual or bivro-tactile stimuli. I am sure that you are all familiar with many of these devices.

They can generally be divided into two groups, in terms of the objective of the device. One set attempts complete communication through the substitute sense modality, while the other attempts to transform only specific selected features of communication.

In the former case, that is, where we attempt complete communication, we have faced only limited success. The problem appears to be that despite our great progress in science and technology, we have not yet been able to build a computer that will substitute for the human brain. Where we have a human brain in the communication network, it is quite simple to transform speech into visual signals that can be recognized by the deaf. Finger spelling and signing are the best known examples, but it would also be possible to have someone typing out a spoken message so that the deaf person could read it, or it could even be sent by Morse Code with the deaf person seeing a flashing light to represent the dots and dashes, or feeling them through vibrators.

When we try to get along without the human brain, we run into difficulty. One of the problems appears to be that the other sense receptors are not well equipped to deal with the complex information contained in the acoustic signals of speech. If one watches speech displayed on an oscilloscope, the waveform gives us so much information that it is impossible for the eye to select out the significant information bearing properties.

There have been attempts to build devices which will somehow process the acousting information and simplify the visual display so that the eye can handle it. Perhaps the best known is the Bell Telephone Laboratory efforts with "Visible Speech," (Potter, Kopp and Green, 1947).

With considerable training, subjects could learn to read the "Visible Speech" displays, but apparently there were enough problems with the procedures that it was never adopted for wide-spread use.

Lieberman (1968) believes that the reason visual representations of speech are so difficult to read "are not to be found at the surface. They do not lie in the characteristics of the peripheral sensory apparatus; they do not derive primarily from superficial inadequacies in the sensory transform; and they are not merely matters of training or experience. The reasons we seek are subtle, and they lie deep."

He points out that there is no one-to-one correspondence between the acoustic signals of speech and the phonemes of our language. If there were, we would have a simple alphabet, with one acoustic unit of sound for each phoneme, and it would be fairly simple to build a system to convert sound into vision. Unfortunately, speech is not a simple alphabet, but a complex code on the phonemic structure of the language and it needs to be decoded if it is to be correctly perceived.

There are several ways to illustrate the complexity of the code. For example, we can understand artificially speeded up speech at rates as high as 30 phonemes per second. If each was represented by a distinctive sound, we would, at the rate of 30/second, hear only an unanalyzable buzz.

Lieberman further points out that ". . . in many cases a single acoustic cue carries information in parallel about successive phoneme segments." It is this parallel delivery of information that makes it possible for us to evade the limitations imposed by the temporal resolving power of the ear and to hear speech as fast as we do. But the advantage is dearly bought, since in the case of speech parallel delivery of information can be accomplished only at the cost of a very complex relation between acousite cue and perceived phoneme: the cue for a particular phoneme is very different according to context, and there are, in these cases, no commutable acoustic segments of phonemic size."

The device which allows us to decode the complex acoustic signals and recover the phonemes is apparently a part of the auditory system and functions only when speech is presented to the ear. No similar decoder is available to the eye. "When one listens to speech, this decoding is carried out by a special mechanism, and the process occurs below the level of conscious awareness. Thus the very different acoustic cues for a particular phoneme in different contexts sound the same in immediate and raw perception. One hears /d/ in the syllables /di/ and /du/ even though the acoustic cues responsible for /d/ are very different in the two cases. Moreover, one hears this identity immediately. No reflection or conscious calculation is required. So far as the listener knows, there is, indeed, no code and no problem."

Facing the difficulty then of a straight-forward visual transform, some investigators have attempted to single out certain aspects of the speech signal for transformation. It is much easier to visualize one or two characteristics of the acoustical signal than the whole message. Historically, there was the coin indicator, an incongruous array of tuning forks connected to light bulbs that were illuminated when the forks resonated to the appropriate frequency. The Maico Chromalizer was another well known visual display of frequency. Still others have worked with other characteristics of speech such as intensity, rhythm, nasality, and duration. While all of these features clearly contribute to the intelligibility of speech, they are far from a complete answer.

Today, I would like to describe to you still another in the series of devices which attempts to take a limited part of speech and present it in a clear, and, what we hope will be an interesting way, with some serious implications for training of the deaf.

SPOT stands for Special Phoneme Optical Translator which presents a visual display of sustained vowels and fricatives /s/ and /sh/. It was the result of speech analysis work by Dr. Glen Culler, formerly of the University of California, Santa Barbara.

Actually, the linguistic analysis needed for a steady state vowel trainer was completed over twenty years ago. From the work of Peterson and Barney (1952) to the studies of Pols, Van der Kamp and Plomp (1969), all agree that the formant frequencies provide the major information needed to specify vowels. These parameters have been closely related to articulation. Closing the mouth for /ü/ or /ē/ places the first formant at 250 to 300 Hz. The second formant is largely controlled by the hump of the tongue. Its frequency moves from 1000 Hz. with the hump at the back of the mouth, up to 2000 or 3000 Hz. for forward vowels like /e/. Peterson and Barney showed a plot of ten vowels spoken by 76 speakers on a plot of first vs. second formant frequencies. Their data showed well-defined regions for each vowel which corresponds very closely with analysis underlying SPOT.

In an earlier version, known as the Chromaphone, the system used three audio frequency filters (Fig. 1) to control the three color signals of a color television set. The television display was synchronized with the glottal pulsations of the voice. The frequencies present in that pulse of sound cause distinctive horizontal color bars to appear on the screen. A man's voice typically shows two sets of bars while a woman has three and a child may have four. If the pitch of the voice is raised, the bars move toward the top of the screen. If the pitch is lowered, the bars move down. Thus, both pitch and inflection can be seen. The colors produced on the screen by a particular phoneme are similar whether the speaker is a man, woman, or child. The vowel sound /ü/, as in suit, produces a set of blue bars while the /ē/, in seat, produces blue and red bars. The sound /o/ as in sock, produces green bars. Other vowel sounds lie between these three extremes. The fricatives /s/ and /sh/, because they are not voiced and have no glottal pulse to provide a stable bar pattern, produce a uniform color over the whole screen. The /s/ is almost all red while /sh/ has strong green lines that give it an orange cast. The entire display is shown in Figure 2 with red at the top, blue at the bottom, and green at the extreme right.

The displays were colorful and interesting to children but proved difficult to evaluate and compare. That is, it was difficult to tell whether a child's pattern was just like his teacher's.

A solution to this problem led to the present version or SPOT, which uses the same filtering system but displays the information as position of a spot of light instead of color.

The filter information is combined in the manner shown in Figure 3 to drive the spot on the /x/ and /y/ axis of the screen. This means that a hypothetical signal with all its energy in the region, covered by what we formerly called the red, or high frequency, filter would have a maximum movement of the /y/ axis or vertically. A signal with all of its energy in the middle region would cause a maximum deflection on the /x/ axis. Others would fall according to some combination of /x/ and /y/ values as shown in Figure 4. This figure shows how the low frequency signals from roughly 300 Hz to 1000 Hz are responsible for the horizontal deflections, and the frequencies between 1000 Hz and 2500 Hz are responsible for the vertical deflections. The horizontal movement to the /s/ and /sh/ above 2500 Hz are out of the range of the vowel sounds.

A more technical way of stating this is that the broad passbands of the SPOT filters serve to produce signals weighted by formant frequency and sound level. Thus the loudest parts of the sound control the position of the spot. The average amplitude of each frequency band is determined by rectification, and these slowly varying signals are summed. The output of two high frequency filters is divided by the sum to produce normalized signals which do not change with the overall volume of speech, but depend only on the formant structure. The normalized midband signal deflects the spot to the right. The filters are constructed so that this left to right motion occurs as the first formant moves from 300 to 1000 Hz, from /u/ to /o/. The normalized high frequency signal raises the spot up, so that the forward vowels which have substantial high frequency formant between 1000 and 3000 Hz are displayed above the back vowels. The /s/ has substantial energy above 3500 Hz, and thus deflects the spot straight up. Lower frequencies present in /sh/ are detected by the high end of the midband filter and move /sh/ slightly to the right of /s/.

Our evaluation of SPOT has been limited because it is such a new piece of equipment. It was used with a small group of preschool age deaf children who showed great interest in the device and appeared to benefit from limited practice. We felt that before placing it in an educational setting, we should know more about the capabilities of the machine. Accordingly, a group of 22 deaf children, ages 5 to 12 years, and a group of 46 hearing adults were tested without prior training by asking them to reproduce the 9 vowels and 2 fricatives /s/ and /sh/. On three separate occasions they were shown how the machine operated and asked to make the indicated sounds. The results are shown in Table 1. When errors were made, they were generally very close to the correct location.

It is interesting to note that the adults did not necessarily perform better than the children; that is, there was no consistent pattern of superiority. The adults were clearly better with /ē/, /ü/, and /s/, while the children were better on most of the others.

A further analysis showed that there were similar differences between men and women, with women being superior on some sounds and inferior on others. Table 2 shows the intercorrelation between males, females, and children. As might have been expected, there is a higher correlation between males and females than between either and children. The next highest correlation is between children and females and the lowest between children and adult males.

TABLE 1.—PERCENT CORRECT WITHOUT TRAINING

	Hearing adults N=46	Deaf children (5–12) N=22
(e) she	75.4	48.5
(i) hip	68.8	77.3
(e) head	60.1	60.6
(a) hat	66.7	66.7
(o) not	93.5	47.0
(ä) saw	16.7	47.0
(ü) shoe	94.2	89.4
(o) no	44.2	69.7
(u) cup	37.7	25.8
s	94.2	76.7
sh	62.3	76.7

TABLE 2.—CORRELATIONS BETWEEN GROUPS PERCENT CORRECT WITHOUT TRAINING

	Children	Adult females	Adult males
Children			
Adult females	0.42		
Adult males	.17	0.53	

The average percentage correct was surprisingly similar for all of the production tests ranging from 61% for female members of the staff to 71% for males, with children scoring 62% correct and non-professional females 64%. A second test, in which the subjects were asked to produce the sound in a word, did not improve the scores and, in fact, in most cases lowered them by several percentage points.

Still another test asked the subject to watch the screen while a tape containing words made up from sounds on the screen was played in the machine but was not audible. Twenty-two adult subjects read 68% of the words correctly when they had no prior knowledge. These were such words as show, easy, us, she, shoe, saw, sees, sash, shaw, is, as, see, so, and says. Each word was presented three times in succession and the subject was asked to indicate what was said. Interestingly, their scores did not improve on a second presentation when a posted list of the words being used was placed before the subject throughout the test.

It has been our general experience that with very little training or experimentation most people can easily learn to move the spot into the designated area. Initially, we attempted to change the boundaries on the templates to accommodate male and female voices or regional accents. This is quite simple to do, but it is even simpler to learn to use the generalized template.

I would like to now demonstrate the SPOT to you.

SUMMARY

The audience was asked to participate with the SPOT. The audience was receptive, and no negative reactions were noted.

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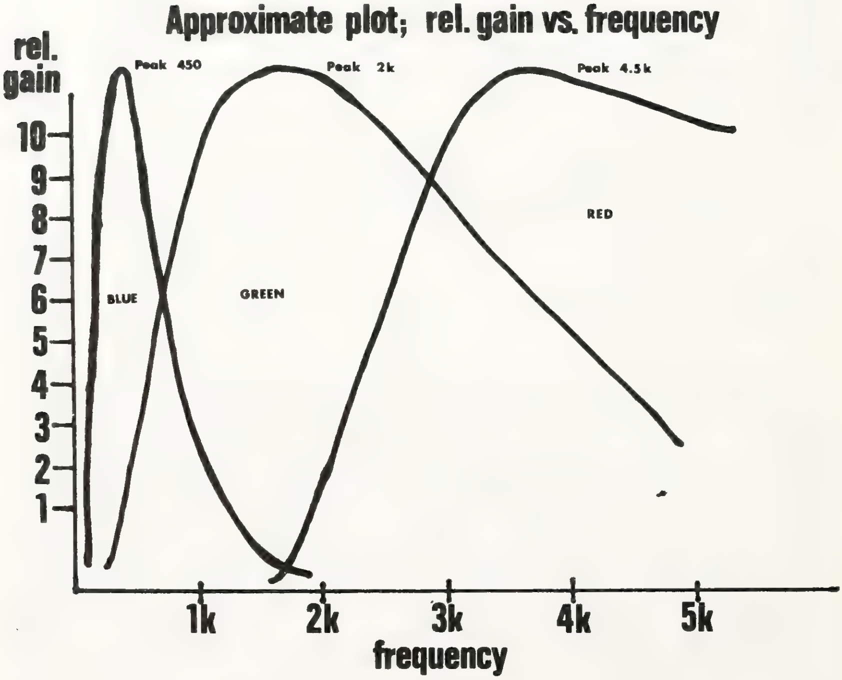


FIGURE 1

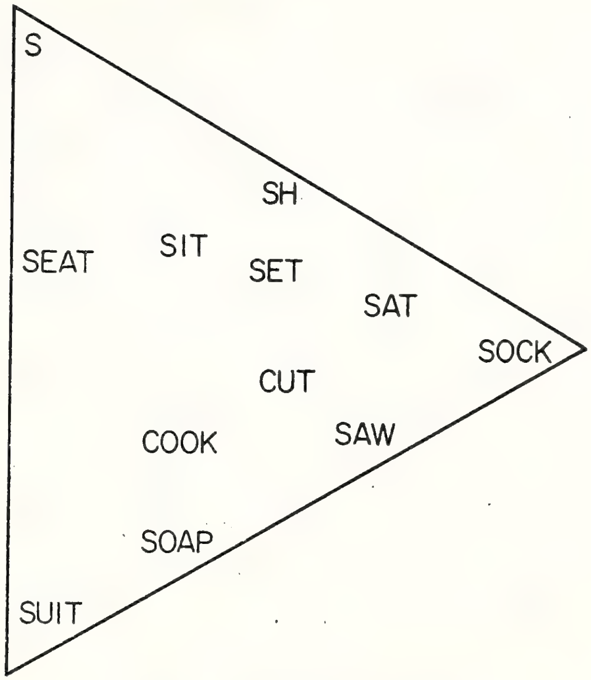
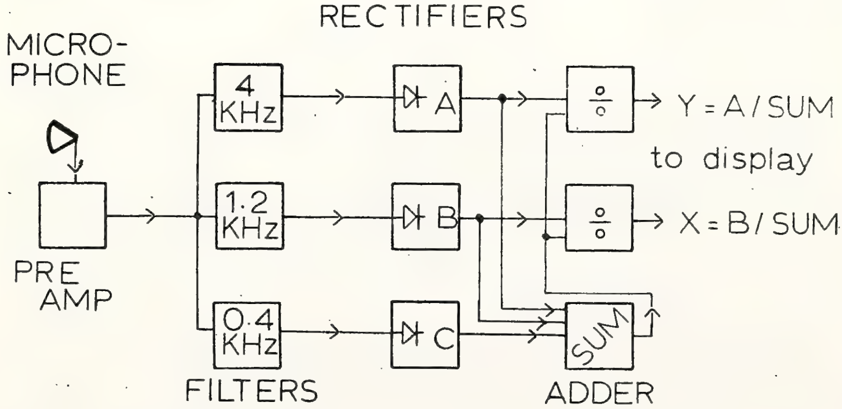


FIGURE 2



Formant frequency and power determine spot position

FIGURE 3

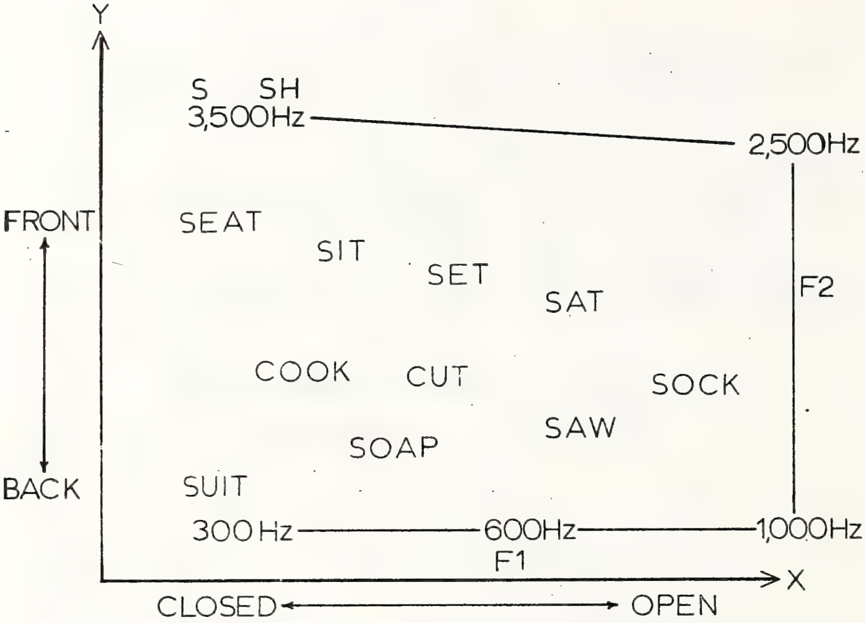


FIGURE 4

STUDENT MANAGEMENT

William J. McClure, president, Florida School for the Deaf and the Blind, St. Augustine

We who operate residential schools for the deaf often look with envy at our counterparts in day school programs. We are particularly impressed by the feeling that they can close their doors at 3:30 or 4 o'clock in the afternoon leaving their worries behind them until the next morning. This is most appealing; however, when one reads of the violence so often prevalent in the public schools of our larger urban areas, the attacks on teachers, the percentage of the educational budget set aside to provide police protection to patrol hallways and corridors and to prevent vandalism, we realize each situation has problems peculiar unto itself.

Having been an administrator for a good many years, I have experienced all of the trauma of deciding whether or not the older boys should be allowed to smoke. (It is funny the question never seemed to come up regarding girls.) Should there be permission from home before the boys are allowed to smoke? Should a separate smoking room be set aside? What effect would this have on younger students? How permissive should we be in allowing student associations in out-of-school hours? How much handholding was permissible? How dark could the dance floor be at parties and how close together could they dance? Also included was the admonishment that you do not kiss your girl in public, but there was no provision for privacy. Looking back from the summer of 1973 (not "The Summer of '42") some of these worries, monumental at the time, now seem ridiculous.

The changes in modern society and in public schools are having their effect on our schools for the deaf. Those in residential schools find that the general unrest of the times and the unruliness of young people in general are being reflected in their student bodies. The permissiveness we see on all sides, the modern views on morality, the standards of conduct for young people, the pill, the trends in what is considered acceptable dress, grooming and behavior in the public schools, the presence and availability of pot, pep pills and a multiplicity of other stimulants and depressants, cannot help but affect our students who are in close touch both with the community where the school is located and with the community from which they come. Instead of asking now whether or not to allow the older boys to smoke, the question might be "What shall we allow them to smoke?" Added to this, we have the Surgeon General's opinion that smoking is harmful, especially to teenagers. Many parents want the school to establish and enforce rules far more rigid than they attempt to enforce at home.

In a number of states statutes are being revised to give full citizenship rights to 18 year olds. They have the privilege of voting, drinking, smoking, gambling, and anything else that is legally permissible to any age group. Our deaf students are often a bit more immature than hearing students the same age. We wonder what the effects will be when we attempt to enforce necessary dormitory regulations and school rules with those who are recognized as adults by law.

When schools and administrators are confronted with problems like the above and when it is difficult, if not impossible, to obtain a sufficient number of high caliber houseparents or dormitory teachers to manage those who will not be managed, it becomes more often necessary to dismiss or suspend those who would destroy the morale of the entire school and wreck the effectiveness of the whole educational program if allowed to remain. This is not an easy decision when adequate educational opportunities are so limited for the deaf student.

At the 1972 meeting of the Conference of Executives in Toronto, Canada, I brought up the question of student management, discipline and the use of drugs. What I had supposed was a small problem at the Florida School turned out to be an almost universal one. The heads of residential schools all seemed to have had previous experience and suffered from the same uncertainties as we in Florida—a lack of experience and knowledge as to how best to proceed. Those associated with some of the largest day schools in the country felt that their problems were even greater. They deal with students who go to and from school each day, some from very questionable neighborhoods, who ride buses or subways and are constantly approached or stimulated by unscrupulous individuals. In the brief time allowed at the Conference Meeting no satisfactory solutions were reached.

For a number of years, we at the Florida School went blithely along our way feeling that we were untouched by many of the problems confronting the public schools. It was only after we stumbled, in the course of other investigations, unto two or three cases of the use of marijuana on campus, that we realized these might not be isolated instances and that unless steps were taken, it might happen again or might become a more serious problem.

Certainly the involvement on our campus has been minimal and limited to a few isolated instances. While we by no means feel that we have permanently eliminated the drug problem at the Florida School, we do feel we are much more aware of its potential to exist and are, hopefully, aware of those students who are more likely to become involved. We have determined that the majority of past instances, even though they be few, involve someone selling or giving marijuana to a student while he is en route to or from the school by bus. It sometimes happens that he buys it at home. It has occasionally happened that a parent knew a student was returning to school with marijuana. There have been a few instances where students have been approached in our local community.

Long ago we determined that we would treat such incidents exactly as they would be treated in the community. Those involved are breaking the law; therefore, we call in the police or the sheriff whichever seems indicated. We have had excellent cooperation from the local officials. Our first concern was that *they* were not too concerned. They felt the small amounts involved in our school and the isolated incidents were hardly worthy of notice compared with problems in the local community; however, their appearances did help to emphasize to the students that laws were being broken.

We, of course, had to take action which we hoped would be successful. For a good many years our school has had honor dormitories for senior boys and for the past two years for senior girls. The privilege of living in these with minimal supervision and extended privileges is much sought after. The student who disregards rules or who is involved with questionable activities is removed from the honor dorm and is returned to an area where supervision is more direct and continuous. Students wish to avoid this demotion at all costs. We have found that it pays to allow a student to work his way back up to the honor dorm. Once he has done this he is likely to avoid errors in the future.

One of the most difficult things for many schools is to secure the numbers and types of persons necessary to direct the out-of-school hours of the students. Recent application of the provision of the Federal Wage and Hour Law limiting the hours houseparents or dormitory teachers can be on duty to 40 or 48 hours per week have made it much more difficult for those people to obtain and to continue the rapport which used to exist between them and their charges.

Because of their importance to the over-all school program and the influence they can have we at the Florida School have designated these positions as *dormitory teachers*. The influence for good has been excellent. They accept responsibilities in a new way and have redoubled their efforts to give the guidance and direction our students need.

One of the things we especially watch for is the student who brings contraband on campus then urges others to join him. In almost every instance this type of "promotion" has resulted in the dismissal of the student or his suspension for the remainder of the school year. This has been especially effective since the student finds that he must repeat the grade level which he began the year before if he returns the following fall. This was a real shocker. We also have a moderate code of dress and grooming which we believe helps to prevent behavior that is too far from accepted standards. We are, of course, limited in some respects in our ability to enforce a rigid code—but we find it rather effective to say you may dress and groom yourself as you do—but you must remain on campus if your appearance is a reflection on our school and student body when you go to town.

Other positive measures we have taken are:

1. The development of a curriculum on drugs, drug abuse and sex education through a 1972 summer workshop on campus. This was reviewed and approved by clergymen, our PTA and our Board of Trustees before being incorporated in our curriculum in 1972–73.
2. The establishment of group discussions and counseling sessions with adequate leadership.
3. More in-service training and guidance for the dormitory teachers so they are more aware of the type of problems which might arise, can anticipate and, hopefully, prevent some of them.
4. The requirement that all dormitory teachers make up an activity schedule for the week. This involves organizing games of all sorts, intramural programs, educational, cultural and social trips, counseling, telling stories, group rap sessions, etc. This has greatly improved the morale of the dormitory staff and has given much more positive direction to student activities and conduct in out-of-school hours.
5. In the future we plan to have more educational equipment in the dormitories. There will be such things as overhead projectors, film strip machines, 8 mm projectors and screens, opaque projectors. All of these items will be used to support the students in academic classes as well as to add to the recreational programs. We hope to promote more reading and to develop more interest in all areas of language, math, science, health, P.E., and recreation.
6. We also hope to develop some hobby rooms in the dormitories so that students can work on projects of their own during leisure hours.

All of these are undoubtedly in effect in some school or another but we find they are helping to solve some of the problems at the Florida School.

STUDENT MANAGEMENT

Dr. Edward W. Tillinghast, superintendent, Arizona School for the Deaf and Blind, Tucson

Dr. Tillinghast did not have a prepared paper, but in summary, he spoke of the change in social values which presents a need for changes in residential schools. He recommended keeping students busy and teaching them more, but not through lectures. It is very important to start when students are very young, teaching them to make decisions regarding social and moral values. They must be in a position to make their own decisions and can only do this if they have been taught to think and have been given the opportunity to practice making decisions.

VISION UTILIZATION TRAINING FOR DEAF CHILDREN

Neil F. Lowell, principal, The Wisconsin School for the Deaf, Delavan, and Larry Quinsland, project teacher, The Wisconsin School for the Deaf, Delavan

How many of you in the audience are trained teachers of the deaf? How may semester credit hours have you had in audiometry, audiology, anatomy and physiology of the speech and hearing mechanisms? Six? Eight? Ten? More?

Now, how many *clock* hours of lecture or lab have you had in vision or anatomy and physiology of the eye? I would wager that most of you have had less than 10 clock hours. Yet this is the primary avenue for learning for the hearing impaired child. It is the only far reaching sense that is left intact. OR, is it? Is it really intact?

Do the deaf children in your classes really possess 2/20 acuity? Do they have problems with depth perception, color discrimination, field of vision, or a host of other subtle problems that might interfere with their learning? Does the average deaf child, as the old wives' tale leads us to think, have better vision or at least use it better than the hearing person because he *compensates* his loss of hearing?

At the Wisconsin School for the Deaf we have become quite concerned with these questions and with an assist from federal funds attempted to answer some of these questions. We also wanted to seek some things to do if we did find that, as some studies have indicated, the deaf on the whole do have a higher rate of vision problems than the normal hearing child.

Of further concern to us was the increasing enrollments of Rubella children—one child in six in our school—who are classically described as having some vision involvement along with other characteristics of that syndrome. What things could teachers of the deaf do to help these children to use what vision they had to a higher degree or "with better utility?"

In consulting with the staff of the Wisconsin School for the Visually Handicapped, we were introduced to the work of Dr. Barraga in the field of vision utilization training. We felt that some of these techniques for the low vision children in that setting might be used or adapted to the needs we anticipated with our deaf children.

With these things in mind we designed a three-pronged project to: (1) screen all the students at the school for vision problems, at a little more sophisticated level than *just* to see how many had 20/20 vision; (2) investigate some of the visual tasks we asked deaf children to do and to develop training techniques to help them *use* their eyes better in these tasks. (The Barraga materials gave us a starting point in this.) (3) to collect "in house" data on each child that would assist us in placement and curriculum planning, especially for the moderately to severely multiply handicapped deaf children. Because of time and scheduling, we established all three aspects of the project and put them into operation concurrently. This meant that the teacher and aide assigned the task of checking the impact of certain visual problems in the classroom setting with MH children had to start without complete knowledge of the vision of each child. This was because the nursing staff needed several months to develop and implement the screening process for 245 children enrolled in our school.

This worked to our real benefit as the teacher and aide did not have built in biases about some of the visual problems some of the children they were working with had. They developed their own scales of efficiency for each child; and then, when the screening was completed, conferred with the nurse in charge of the screening and found agreement and support for most of their observations. This allowed for development of some interesting items for the classroom teachers to be aware of in the daily activities of the children.

As the teacher and aide worked on the development of classroom detection and training techniques for the teachers, the teaching staff and dormitory staff were asked to submit names of children they had some suspicions about as to how well they could use what vision they had. Since the project population was mainly based with 49 12–16 year old children with academic problems involved in another project, referrals from other classes and groups gave a broader base to the sampling and demonstration of techniques.

As certain items were found out about the children that might have impact on class or dormitory performances, this was shared with the staff.

Two of the more important early findings were the high rate of color discrimination problems among the boys in the group of 49 (16%) and the discovery that many children in the total school, (n-29), who had prescription glasses were not wearing them. The color problems were for teachers and houseparents to note and to compensate if needed in their classes, but the non-use of eye glasses became a real effort and involved not only letters home but also lectures to children and parents.

We tried many activities to check on many aspects of vision and how they relate to the classroom; and especially to the tasks of reading, lipreading, and fingerspelling.

In dealing with the visual memory aspect, we developed a series of slides. These were used to check immediate response, 2-second delay response, 15-second delay response and overnight (24 hours) delay response.

In trying to determine how long we might ask the children to "delay" before responding, we felt we should know what is the average length of spoken unit used by teachers, aides and peers at the various levels in our school. We felt this average would relate well with the "guessing" task of filling in missed items in lipreading.

Our results were interesting: in the primary levels, the average length of time of spoken unit was 1.7 seconds; in the special project classes, it was 2.1 seconds; intermediate classes, 3.0 seconds, and in the advanced department, it was 2.8 seconds. The all-school average was 2.6 seconds. The "delay" or speed of the carousel projector was 2.4 seconds or very nearly the all-school average.

I would like to have you run through a few of these with me now.

[Slides presented illustrating visual memory tasks.]

OUTLINE OF SLIDES PRESENTED

I Visual Memory Exercises

Set I Missing Foods (study time - 10 seconds)

1) a. carrot - onion - tomato
   b. ______ - onion - tomato
2) a. corn - onion - tomato - potato - carrot
   b. ____ - onion - tomato - potato - carrot
3) a. apple - pear - orange - banana - pineapple - lemon - grape
   b. banana gone - peach added

Set II Numbers

1) 281	)	Slides exposed
2) 531	)	for .30 seconds:
3) 6894	)	Responses: immediate, 2 seconds,
4) 645564	)	15 seconds and 24 hours.

Set III Letters (nonsense words)

1) ard	)	Slides exposed for .30 seconds.
2) aco	)	Responses: immediate, 2 seconds,
3) vuph	)	15 seconds, and 24 hours.
4) yobjuth	)	

Set IV Moving People

1) 3 children in set positions. Observer child has 10 seconds to note positions - leaves the room.
2) Another child changes one position of one "model."
3) Observer child returns to detect what has been changed.

Comments on Sets I - II - III - IV

A. Those children who could remember immediately were also successful at 2 seconds, 15 seconds and 24 hours.

B. Those children unable to remember any of the slides were unsuccessful at all levels, objects, and time delays (75% correct needed for success).

C. The slides of numbers were the easiest of all samples used for all children.

Set V Three slides showing 2 boys in game involving 6 colored blocks - two are moved - observer boy identifies.

Set VI Two slides using materials from Project LIFE

Comments re: Project LIFE

A. Colors, figures and ground lack contrast - a problem to 31 children in Project LIFE program so tested.

B. We had to install wide angle lenses for 8 of the children to be able to function in Project LIFE.

Set VII Three slides - games found helpful with 10-16 year olds.

A. Concentration

B. "The Moving Spot" - each day some odd marker is placed in the room. Observer classes had a "race" each day to see who could find it first.

C. Square Off - very detailed skills involved.

II Visual memory vs Lipreading, Fingerspelling

Set VIII Sequenced letters

Group A

1) J) Presented by carousel
2) i) as single slides but with 2.4
3) h) seconds from start to finish.

Group B

1) n) Presented by carousel
2) o) as single slides but with 2.4
3) p) seconds from start to finish.

Comments re: visual memory, lipreading and fingerspelling

A) We found little correlation between visual memory and lipreading ability.

B) We found high correlation between visual memory and the reading of fingerspelling.

III Visual memory - number, color and arrangement

Set IX

a) 1 - 1 one object, one color)
b) 2 - 1 two objects, one color)
c) 4 - 1 four objects, one color)exposed
d) $10 - 5_s$ 10 objects, 5 colors, symetrical) .30
design)seconds
e) $10 - 5_{as}$ 10 objects, 5 colors, asymetri-)
cal design)

Comments on Set IX

A) Success leads to success, the failures could not get beyond 2 - 1 level.

B) Even the teachers failed $10\text{-}5_{as}$. Successful children could do $10\text{-}5_s$.

Our first analysis of the data has led us to believe that there is less relationship to certain visual abilities and lipreading than there is in connection with residual hearing and good lipreading.

To explain that a little further, we found that those children who had more residual hearing did better on *silent* lipreading video tapes than did those who had more severe hearing losses. Those children who had certain problems in visual tasks such as poor visual memory, mild acuity problems, depth problems, and so forth, still followed the hearing loss scale for predicting success in lipreading.

At the outset, we had anticipated that children with visual memory problems would do poorer than those who had good visual memory. But this was NOT TRUE. This supported the premise, supported by some authors, that the child with mild to moderate hearing difficulties lipreads better than the profoundly deaf child because the former has better language and can "guess" and fill in the gaps more easily.

One notable exception to all this was evident, however. Within the target population of 49 children, all but six were born deaf, and of all the born deaf, only one boy had deaf parents. This boy had a profound loss, normal vision *and* was one of the better lipreaders.

Our analysis of this is that this deaf child with deaf parents had a good grasp of language through the use of sign language and speech in the home at an early age. This gave him a background from which to "guess."

This reminds me of something Ed Lowell mentioned in response to a series of questions I sent him as we were planning this project. "I suppose that my random thoughts about your problem would get back to the difficulty I have always had in sorting out how much of what deaf children see is related problems of their eyes, which I would assume is acuity, and how much is the result of the perceptual set they have, which, in turn, may be related to linguistic concepts." This was too profound for our project. It needs deeper study, but I am sure most relevant.

Summary

We found many interesting things about our deaf children and their needs in vision.

With our limited number of children, many who had other disabilities in addition to deafness, we found that:

(1) Some children could perform more successfully if tasks were kept on the same focal plane, i.e., all on desk top, or all at the chalkboard.

(2) Most of the children performed better on tasks using these modes of presentation in descending order:

a. desk top printed material.
b. chalkboard material.
c. overhead projector.
d. opaque projector.

(3) Although not thoroughly *tested,* colored slides rated higher than the overhead but not above chalkboard.

(4) Attention span was longest with slides and video tapes, lowest with opaque projector.

(5) Colors and high contrast levels aided visual memory.

(6) The children could select correct response from lists of possible answers much more accurately than they could recall and write down the response. (Nonsense material)

(7) Training did not help the older deaf child improve his vision utilization. We need to start young.

(8) Rubella children (one fourth of the study population) exhibited a high probability of visual difficulty, but not in the area of visual memory.

(9) Children with acquired deafness from meningitis, infectious diseases, etc., did very well on all tasks. Born-deaf children of hearing parents had the least success.

One of the most pressing items related to teaching multiply handicapped deaf children that we found was that many of these children had one mode or media to which they could respond successfully—consistently. We need to find that mode or media for each multiply handicapped child, and use it.

THE WISCONSIN SCHOOL FOR THE DEAF

EXPLANATION OF THE VISION SCREENING FORM

Visual acuity

An illuminated Snellen Chart of scrambled E's was viewed in a darkened room from 20 feet.

Color perception

The AO Pseudo-Isochromatic plates were used. This book is put out by the American Optical Co. and consists of 10 plates. Correct and color deficient responses are given in the back of the book.

Field of vision

A cardboard protractor was used with a radius of 10 inches. At midpoint of the curved edge zero was marked. Then on each side of the zero, 10 degree intervals were marked off to 100. The protractor was held to the bridge of the nose with the zero directly ahead. The student looked at a fixed point *straight* ahead while the person testing slowly moved a pencil from back to front along the edge of the protractor on one side. The point where the student first saw movement is noted in degrees. Most people can see more than 90 degrees on each side. A field of vision of less than 70 degrees on each side denotes a serious handicap. Pictures and a more detailed description of the test can be found on pg. 43 of "Sportsmanlike Driving" by American Automobile Association.

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BUSINESS SESSIONS, JUNE 26 AND 28

President Turechek. The meeting will come to order. The first item on the agenda this afternoon is the report of the nominating committee for the election of officers for the coming biennium. I will call on Mr. Eldon Shipman, chairman of that committee, for his report:

REPORT OF NOMINATING COMMITTEE

Eldon Shipman, West Virginia

Mr. Shipman. I would like to read the names of the people that have been nominated and then ask for nominations from the floor. Let me explain how these names were collected, and then if you think of anyone else you want to add, you may do so. In the newsletter we asked for people to send in nominations to the members of the committee, and no other names were received until, I think, perhaps yesterday, when one person gave me a list of names. We included all the names that were submitted, and they are printed on the ballot. I will read them, and then if you have any other nominations we will receive those at that time. The constitution requires that there be no contest for position of president, since he is the president-elect:

Election Ballot

President.—Jack W. Brady, Georgia.

President-elect.—Robert T. Dawson, Florida; Robert Davila, Maryland.

First vice president.—Warren Fauth, California; Alfred J. Lamb, Indiana; Leon Auerbach, Maryland.

Second vice president.—Edward Reay, Idaho; Winfield McChord, Kentucky; Rance Henderson, North Carolina; Earl Stevens, Maryland.

Secretary-treasurer.—Gerald Burstein, California; Harvey Corson, Ohio; Paul Bird, Idaho.

Directors (3 to elect—3 or more must be classroom teachers).—Taris Denis, New York; Rosemary Hilke, Washington; Lawrence Newman, California; Gary Olsen, Indiana; Archie Stack, Washington; Fred Yates, Virginia; Kenneth Lane, Connecticut; Albert Berke, Connecticut; Keith Lange, Oregon; Frank Slater, Florida.

On motion made, seconded, and carried, the nominations were closed for the offices of president-elect, 1st vice-president, 2nd vice-president, and secretary-treasurer.

Mr. Warren Fauth of California asked that his name be withdrawn as a candidate for 1st vice-president.

The following names were struck from the ballot, it being determined they are not classroom teachers, and therefore not eligible: Taris Denis, Archie Stack, Fred Yates, Kenneth Lane, Keith Lange.

Lawrence Newman asked that his name be withdrawn as a candidate for director.

Lore Levene, Illinois, was nominated from the floor as a candidate for director, and upon motion made, seconded and carried her nomination was accepted.

The following were nominated from the floor as candidates for directors, but declined: Rosalyn Rosen, MSSD; Ausman Smits, Gallaudet College; Alfred Darby, American School.

ELECTION RESULTS

President.—Jack W. Brady, Georgia.

President-elect.—Robert Davila, Maryland.

First vice-president.—Alfred J. Lamb, Indiana.

Second vice-president.—Winfield McChord, Kentucky.

Secretary-treasurer.—Gerald Burstein, California.

Directors: Rosemary Hilke, Washington, Gary Olsen, Indiana, and Frank Slater, Florida.

REPORT OF THE PRESIDENT

Armin G. Turecheck, Ed.D.

During the past two years we have seen several significant changes in our field of education of the hearing impaired. The Convention of American Instructors of the Deaf continues to be the dominant organization in the field of education of the deaf and continues to move toward becoming an even stronger association with greater involvement of teachers. We represent a population of non-eloquent, passive minority in the deaf and we often find their needs are relegated to a low priority. This is frustrating to the educator of the deaf who has seen what can be accomplished with sufficient funding, and proper educational placement. Individually or in small groups, we can not achieve our goals but with a strong national organization, much can be done.

Among the changes we have noted are the following:

(1) An increase in the number of children enrolled in programs for the deaf.

(2) A sharp increase in the number of children enrolled in day classes.

(3) A tremendous increase in the number of hearing impaired children with other handicaps.

(4) Almost universal acceptance by the states of mandatory special education laws.

(5) Determination by a number of legal suits of the "right to an education" for every child regardless of his handicap.

(6) An increase in the funds appropriated by Congress for education of the handicapped, but with these funds being held up by the President.

(7) Deletion of categorical aid from bills presently being considered by Congress.

(8) Abolition of national advisory committees.

(9) Establishment of higher certification standards for teachers by the Council on Education of the Deaf.

(10) Initial efforts by the Council on Education of the Deaf to strengthen the requirements for accreditation of teacher training programs.

The *American Annals of the Deaf* shows an enrollment of 40,816 deaf children in all programs in 1970 with an increase to 49,696 in 1972. This indicates that we now have 9,000 more children in our programs than we had two years ago. There was a decrease from 19,436 in residential schools in 1970 to 16,799 in 1972. A large increase is indicated in day programs where the enrollment grew from 20,433 in 1970 to 32,897 in 1972.

The increased number of hearing impaired children being served may be due to better identification of the hearing loss; to decisions by the courts establishing the "right to an education" for every child; or to the increase in the number of states enacting mandatory special education laws. The requirement for providing the educational program as close to the child's home has become an accepted principle in many states. This is not necessarily for the best interest of the child. We see a proliferation of one and two room programs being established by school administrators in an attempt to meet the requirements of new laws or court decisions, or from parental pressure. When the age span among the children enrolled is small and they are relatively young, such programs may be satisfactory, however, too many include children of all ages and provide no expert supervision for for the class room teacher.

The Conference of Executives of American Schools for the Deaf accreditation criteria for an acceptable program for deaf children stipulate that there be a minimum of 50 children enrolled with 8 teachers, and a trained supervisor. For a program for deaf children to have less than this will add the handicap of an unsuitable educational program to the handicap of deafness he already has.

In the last two years, there has been more than a 100% increase in the number of multiply handicapped deaf children enrolled in our programs. In 1970, 4,308 were so identified and in 1972 this number grew to 8,955. The rubella epidemic of 1964–65 left a large number of children with a multiplicity of handicaps and, most frequently, one of these was in the area of communication. These children started to school in the last two or three years and may account for part of the increase in multiply handicapped children in schools for the deaf. More programs for these children have also been established in schools for the deaf thus permitting their placement in a school rather than in an institution or left at home. With this change in our population, there is a need to change the teacher preparation programs to prepare them to work with all the disabilities now found among the children in schools for the deaf.

Congress has shown a desire to provide financial assistance to programs for the handicapped and has passed legislation to this effect, however, these have been vetoed by the President on the basis that they are inflationary. One matter of concern to us is the deletion of any reference to categorical aid in these bills. In the past, this feature in legislation has been very helpful to programs for the deaf. When education of the deaf is placed in competition with that for the other handicapped, we generally lose out because of our lack of numbers or vocal support.

The Federal legislation also requires that funding be based on state plans. The relationship of the program for the deaf to the authorities in the state responsible for developing the state plan becomes a critical one. It does seem that the goal of most Federal legislation is to provide up to 75% of the excess cost of educating a handicapped child, and this can not be anything but helpful to our programs.

Along with changes in methods of funding, there seems to be a concerted effort at the national level to abolish all advisory committees which will also include the National Advisory Committee on the Education of the Deaf. This committee has performed a valuable function in keeping Congressmen and officials in the Bureau of Education for the Handicapped apprised of the needs of deaf children.

The Council on Education of the Deaf has been active in taking over the duties of certifying teachers of the deaf that formerly were the responsibility of the Conference of Executives of American Schools for the Deaf. The new standards will go into effect on Jan. 10, 1974 and all applicants after that date will have to meet the new requirements. The Council on Education of the Deaf is presently studying the accreditation of training centers for teachers of the deaf and hopes to develop new criteria for them in the near future. Legislation, especially on the Federal level, has been a matter of concern for the Council also. Members have appeared before Congressional committees and a nation wide communications network has been set up to provide fast action on any pending legislation.

In conclusion, there are certain changes that are needed in the Convention of American Instructors of the Deaf which I hope can be accomplished. More teacher involvement is needed. We have emphasized this during the last two years and hope that, in time, all of the offices will be held by classroom teachers.

The Convention constitution is out of date and hopefully action can be taken toward developing a more meaningful document. There is also the need to establish a central office to conduct the business of the Convention. Discussions have been held with the Conference of Executives of American Schools for the Deaf toward the goal of establishing a joint office.

I am most appreciative of the fine support I have received in the last two years from Dr. Howard Quigley and Mr. Robert Dawson, who have spent untold hours developing the superb program you are now enjoying. The success of this meeting is due to the untiring efforts of Mr. Alfred Lamb and his fine staff. There are many others who made the past two years pleasant and profitable and my thanks go to every one of them.

President TURECHEK. Miss Goldie Trboyevich, Editor of the *Newsletter*, will present her report:

NEWSLETTER REPORT

Goldie Trboyevich, Kendall Demonstration School, Washington, D.C.

Two years ago Dr. Turechek wrote and asked me if I would be editor of the *Newsletter*, and he said I would have 10 or 12 associate editors, each one for a different area, and I thought my work would be easy: they would send me all the articles and all the good things, and I would just have them printed. Well, it didn't work out that way. Three or four of the associate editors didn't want to. Others felt they had to write the articles themselves, so I had a few of the old faithful to contribute articles, and I got some that went into file 13. Then I started getting term papers from graduate students, and I had to write them to say that these are fine, but the *Newsletter* is not a proper vehicle for term papers. We did the best we could and we went along on the theory that we get out of the organization what we put into it; the more we put into it the more we get out of it.

President TURECHEK. I do appreciate the wonderful job you have done the past two years. I know it was a struggle for you, but the papers you did issue were beautiful, and we appreciate them.

I would like to have a report from the Parent Section. Mrs. Lee Katz and Mr. James Little are to make that report. We have had some problems with the Parent Section. They are in need of additional funds in order to stay afloat—somewhere in the neighborhood of $25,000 or $26,000. They appeared before the Executive Committee the other day, and we see no way the Convention can afford that much money for this one sub-section. Maybe they are not here this afternoon to make a report, but the Executive Committee did decide that we cannot afford that amount. We will now hear from Mr. Paul Bird of Idaho, who has a motion to present:

Mr. Bird. At the 1971 meeting of the Convention the following recommendation of the Executive Committee was adopted: "The Executive Committee recommends that the dues be $15 per year, beginning January 1, 1972, of which $10 shall be for the *Annals'* subscription . . ." We would like to recommend a slight change in an amendment, because the way it is now it appears to be a fixed charge to us for the *Annals* at $10 per year. We anticipate that the *Annals* may not cost that much sometime in the future, so we would like to recommend that the statement be changed to read "of which up to $10 shall be for the *Annals'* subscription." I move that this change be made.

The motion was duly seconded, the question called and the motion carried.

President Turechek. We will now have a report on the Houseparent Section, by Mr. Peter Ripley:

REPORT ON HOUSEPARENT SECTION

Peter H. Ripley, Morganton, N.C.

Mr. President, fellow members of the Convention. In the summer of 1972 President Turechek invited me to briefly address the 1973 Convention regarding dormitory personnel, paying particular attention to their professional status and to also make recommendations to the Convention.

It is my intention in these next few minutes to approach this subject from three different directions.

First, a short chronology of events indicating the responsiveness of professional organizations to dormitory personnel.

Secondly, the opinions of dormitory personnel themselves. In this regard, I represent over one thousand dormitory personnel who have responded to a survey conducted in the fall of 1972.

Thirdly, to offer recommendations regarding future directions.

In regard to the responsiveness of professional organizations, I offer you the following: in 1959 a resolution was passed by the CEASD calling for a study by the CAID as to the feasibility of establishing a section for houseparents. In 1961 the CAID reported at their meeting that more study was called for. By 1973, the Conference of Executives of American Schools for the Deaf had established requirements for certification of dormitory personnel but no further action was ever taken by the CAID with regard to the establishment of any section or the provision of membership status for dormitory personnel. We see, therefore, that since 1959 there has been a shameful lack of effort in the provision of some professional organization which can serve as a clearing house and vehicle for professional activity for dormitory personnel.

In the fall of 1972 I conducted a survey among dormitory personnel throughout the United States and Canada. Of the 72 schools asked to participate, only 53 responded; a 73% return on questionnaires. Of the nearly 1200 individuals who did respond, 960 indicated an interest in the establishment of some professional organization for dormitory personnel. Most of this group additionally indicated an interest in the establishment of a section within the framework of the CAID and further indicated an interest in paying their own way by the adoption of some dues schedule for such a section.

The third aspect of my presentation is to provide recommendations to the Convention for further consideration. Mr. President and fellow members of the Convention, my recommendation is in the form of a motion, as follows: I move that the CAID establish a section for dormitory personnel, such section to be investigated, organized and developed by a committee of five appointed from the membership by the president, with a report to be made at the 47th meeting in 1975 concerning recommendations for implementation. Included in this motion is a request for $300 to cover costs of additional investigations by the committee.

President TURECHEK. You have heard the motion. Is there a second? John Spellman seconds the motion. Any discussion?

ELLERY J. ADAMS (Los Angeles). I move that Mr. Ripley's motion be amended to include a study of instructional aides in classrooms for the deaf.

The motion was seconded, and after discussion was declared lost by the president upon a voice vote.

KENNETH LANE (Xerox Corporation). I move that Mr. Ripley's motion be amended to increase the amount of $300 to $1,000.

After considerable discussion a motion was made to table Mr. Lane's motion until the Thursday business session. This latter motion was seconded and upon a standing vote was declared adopted by the membership, and the matter was tabled until Thursday's session.

President TURECHEK. At this time we would like to entertain invitations for the 1977 meeting. As you know, the dates for the 1975 meeting have already been set, and we will meet in Morganton, North Carolina. At this time we are open for invitations for 1977.

INVITATION FOR THE 1977 MEETING

Ellery J. Adams, Los Angeles, Calif.

Mr. President, and members of the Convention: The Los Angeles County Board of Education and the office of the Los Angeles County Superintendent of Schools would be significantly honored to host the 48th biennial meeting of the Convention in 1977 in Los Angeles, California.

I would like to point out that Los Angeles has a wide range for convention facilities, and cultural and recreational attractions for those members who would like to combine business with pleasure. Los Angeles County is proud of its special education programs and would be pleased to have you visit them.

President Turechek. I would like to read a telegram which we have received:

> The California State Department of Education, Division of Special Education, endorses and supports the nomination of Los Angeles County for host of the 1977 CAID meeting. County Superintendent Richard Clowes and staff are highly dedicated to quality education for deaf children, and have shown strong leadership in advancing programs and services. Facilities abound. We are confident the 1977 meeting would be outstanding if held in Los Angeles and hosted by by Los Angeles County superintendent and special education staff.
>
> Barry Griffing,
> *Assistant Chief, Division of Special Education.*

Are there any other invitations for the 1977 meeting? Since the sites for meetings are chosen by the Executive Committee, this invitation will be brought to their attention tomorrow morning, at which time there will be a meeting of the incoming group of officers, the present staff of officers, and the directors. If there is nothing further, the meeting is recessed until Thursday.

President Turechek (Thursday). I call the meeting to order. We will receive the report of the treasurer, Gerald Burstein:

Treasurer's Report

Mr. Burstein. Mr. President and members of the CAID, the financial reports for the period July 1, 1971 to June 30, 1972 have been checked and found correct by a qualified professional auditor. The interim report for the nine months July 1, 1972 to March 31, 1973 was reviewed. The report for the full year will be audited following the close of the fiscal year June 30, 1973. Both reports will be included in the proceedings of this meeting.

Gilbert Walker,
Certified Public Accountant,
Bethesda, Md., *July 28, 1972.*

Convention of American Instructors of the Deaf,
5034 Wisconsin Avenue NW.,
Washington, D.C.

Gentlemen: At your request I have conducted an audit of the accounts and records of the Convention of American Instructors of the Deaf for the fiscal year ended June 30, 1972. My examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as I considered necessary under the circumstances. The results of my examination are contained in the following exhibit:

EXHIBIT "A"—STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS FOR THE FISCAL YEAR ENDED JUNE 30, 1972

In my opinion the accompanying statement of cash receipts and disbursements presents fairly the financial condition of the Convention of American Instructors of the Deaf as at June 30, 1972, and the correct results of operations (on a cash receipts and disbursements basis) for the fiscal year ended June 30, 1972, in conformity with generally accepted accounting principles.

Respectfully submitted,

Gilbert Walker,
Certified Public Accountant.

EXHIBIT "A"

CONVENTION OF AMERICAN INSTRUCTORS OF THE DEAF

Statement of cash receipts and disbursements for the fiscal year ended June 30, 1972

Cash receipts:	
Members' dues:	
Regular	$58, 870. 00
Student	2, 325. 00
Total	61, 195. 00
Interest income	4, 028. 86
Convention refund (Little Rock)	502. 09
Sales of proceedings	196. 00
Mailing lists and postage	286. 14
Miscellaneous	14. 35
Total cash receipts	66, 222. 44
Cash disbursements:	
Personnel services (including fringe benefits)	11, 558. 16
Special services	177. 70
Rent	1, 158. 00
Office supplies and equipment	1, 383. 14
Insurance	161. 10
Telephone, postage, and freight	933. 98
Travel	413. 64
Printing	2, 211. 63
Magazine subscriptions for members	40, 457. 50
Refunds	75. 00
Organization dues	675. 00
Contribution to Council of Organizations Serving the Deaf	100. 00
Proceedings expenses	1, 349. 50
Miscellaneous	289. 40
Total cash disbursements	60, 943. 75
Excess of cash receipts over cash disbursements	5, 278. 69
Cash balance July 1, 1971	69, 622. 29
Cash balance June 30, 1972	74, 900. 98
Above balance comprised of:	
Checking account	5, 361. 75
Savings account	6, 979. 51
Savings certificates	62, 559. 72
Total	74, 900. 98

GILBERT WALKER,
CERTIFIED PUBLIC ACCOUNTANT,
Bethesda, Md., July 23, 1973.

CONVENTION OF AMERICAN INSTRUCTORS OF THE DEAF,
5034 Wisconsin Avenue NW.,
Washington, D.C.

GENTLEMEN: At your request I have conducted an audit of the accounts and records of the Convention of American Instructors of the Deaf for the fiscal year ended June 30, 1973. My examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as I considered necessary under the circumstances. The results of my examination are contained in the following exhibit:

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Respectfully submitted,

GILBERT WALKER,
Certified Public Accountant.

EXHIBIT "A"

CONVENTION OF AMERICAN INSTRUCTORS OF THE DEAF

Statement of cash receipts and disbursements for the fiscal year ended June 30, 1973

Cash receipts:	
Members' dues:	
Regular	$64, 975. 00
Student	2, 780. 00
Total	67, 755. 00
Interest income	4, 202. 84
Sales of proceedings	45. 95
Miscellaneous	189. 53
Total cash receipts	72, 193. 32
Cash disbursements:	
Personnel services (Including fringe benefits)	15, 602. 53
Special services	260. 00
Rent	2, 179. 32
Office supplies and equipment	1, 664. 05
Insurance	120. 64
Telephone, postage, and freight	920. 62
Travel	1, 545. 69
Printing	1, 656. 37
Magazine subscriptions for members	25, 000. 00
Refunds	145. 75
Professional dues	400. 00
Transfer to Convention account	500. 00
Proceedings expenses	733. 43
Legal and accounting services	425. 00
Parent workshop (travel, secretarial, etc.)	2, 309. 21
Miscellaneous	452. 23
Total cash disbursements	53, 914. 84
Excess of cash receipts over cash disbursements	18, 278. 48
Cash balance July 1, 1972	74, 900. 98
Cash balance June 30, 1973	93, 179. 46
Above balance comprised of:	
Checking account	19, 437. 39
Savings account	7, 335. 10
Savings certificates	66, 406. 97
Total	93, 179. 46

President TURECHEK. Thank you, Mr. Burstein. We will now hear the report of the national office, Dr. Quigley:

REPORT OF ACTIVITIES IN THE NATIONAL OFFICE

Howard M. Quigley, Executive Secretary

This report includes the period July 1, 1971 to June 1, 1973. During this time the national office has had its share of problems which face any office of this kind, but all in all progress was made in a number of ways. The following brief descriptions of activities may provide a general idea of what is happening:

1. *Administration.*—The CAID national office shares staff and facilities with the *Annals* business office and the Conference of Executives national office on the basis of a 40–40–20 percent sharing of expenses, respectively. In July, 1971 the offices moved to new quarters which soon proved to be inadequate. Another move to larger quarters in the same building was made in June, 1972, and an additional staff member recruited. This addition was necessary because of the greatly increased workload, and was justified further on the basis that this person eliminated the need for hiring most of those who previously had served on a part time basis, some for as little as a couple of hours at a time. Miss Ferne Davis, as administrative assistant, has done a fine job in coordinating the office routines and developing procedures related to memberships, maintenance of the mailing lists, the *Newsletter* and other items.

2. *Finances.*—Accompanying this report are statements of the finances for the period July 1, 1971 to June 30, 1973 prepared by our auditor, Gilbert Walker, CPA.

During the past two years the total of expenses has been close to that of income. Several unanticipated expenses have arisen, primarily in the areas of support for the Parent section, in travel, equipment purchases, legislative activity and the *Newsletter*. There will probably be a small margin between income and outgo during the next two year period. If membership increases materially there should then be no problem.

The accompanying proposed budget reflects anticipated costs for the two year period 1973–1975. Major items of increases are salaries, rent and the fringe benefit provision of 15%, increased from 12%. The social security tax has increased, and will increase more. The 15% level that we allow is in line with other organizations similar to ours. Salaries, as everywhere, have increased substantially. It is becoming more and more difficult in the Washington area to find competent personnel at the salary levels we feel we can live with.

3. *Membership.*—At this writing the membership totals 4,523. This is substantially below the total for 1971, when the highest membership total in history for the CAID was reached. Reasons for the decline are not clear, unless the increased dues that went into effect in January, 1972 became a factor. The constitution of the CAID does not provide for a membership committee. I strongly recommend that one be appointed, with the charge to examine the membership potential for increasing representation from the field.

4. *Newsletter.*—Three issues of the *Newsletter* were distributed during 1971–72, and four issues this past year. Miss Goldie Trboyevich has served most capably as editor. Her work is greatly appreciated. The

problem of obtaining contributions from members remains a difficult one to resolve.

The average cost of the *Newsletter* is about $400 per issue for printing and mailing.

5. *Proceedings.*—As most members know, the proceedings of every meeting of the CAID are printed by the Government Printing Office. Authority for doing this is contained in a concurrent resolution of the Senate and the House. In order for the proceedings to be distributed within a reasonable time after a meeting it is necessary that material to be printed be available no later than July 15, so that a resolution can be entered into the Senate, for subsequent concurrence by the House. Once the copy is in and the resolution passed work progresses rapidly in the production of the report.

6. *Changes of address.*—One of the problems that requires a considerable amount of staff time and expense is the failure of members to inform the national office of changes of address. Many copies of the ANNALS are returned because delivery cannot be made, requiring the payment of additional postage in each instance.

7. *Certificates of Merit.*—The CAID–CEASD joint certificate of merit for teachers was presented to 174 persons from July 1, 1971 to date. Application forms for the certificate are available upon request to the national office.

I wish to express my appreciation to the Executive Committee for the cooperation extended the past two years, and to the staff here at the national office for the diligent manner with which the work of the office has been carried on.

(At this point Dr. Roth of Kansas inquired if there is a quorum present, and further suggested that the various reports being presented should have the approval of the membership. President Turechek then declared that a quorum is present).

Upon motions duly made and seconded the reports of Mr. Burstein and Dr. Quigley were accepted.

Upon motion made and seconded Mr. Lane's amendment to Mr. Ripley's original motion with regard to a houseparent section, was removed from the table, for further consideration.

Mr. Burstein stated that the Executive Committee recommended that due to financial considerations the Convention not adopt the amendment but accept the original motion. After further discussion, both pro and con, upon a voice vote Mr. Lane's amendment to increase the amount from $300 to $1,000 was defeated. Mr. Ripley's motion was then adopted.

President TURECHEK. We will now have a report on the COSD, by Edward Reay, Idaho.

REPORT OF THE FORUM AND OTHER ACTIVITIES OF THE COUNCIL OF ORGANIZATIONS SERVING THE DEAF

Edward W. Reay, Gooding, Idaho

The Sixth Annual Forum of the Council of Organizations Serving the Deaf was held in Colonial Williamsburg, Virginia, March 14–16, 1973. The theme of Forum VI was, "The Deaf Child and His Family."

This Forum was very well attended with a total registration well beyond 500 persons. Throughout the meetings, there seemed to be a high level of interaction primarily because of the desirable mix of parents, deaf adults, professionals and children.

Dr. Glenn Lloyd, New York University Deafness Research and Training Center, will serve as editor of the proceedings.

Following introductions at the opening session on March 14 by COSD President, Emil Ladner, President-Elect David M. Denton introduced the keynote speaker, Mrs. Gertrude Galloway of the Maryland School for the Deaf, whose talk was entitled, "The Deaf Child's Right to Be Himself."

Other speakers during the three-day meeting were equally as interesting as Mrs. Galloway. These speakers were Frank G. Bowe, Jr., New York University Deafness Research and Training Center, who discussed crisis points; and, Miss Margaret Kent, Maryland School for the Deaf, whose speech was entitled, "Communication."

Two panels were very outstanding. The moderator and speakers on the "Family Patterns" panel were Glenn Anderson, Dr. Robert Smithdas, Mr. John Shipman, Miss Kathy Schwartz and Mrs. Alice Tinsley; and, Dr. Eugene D. Mindel moderated the panel entitled "The Deaf Child's Family" with Dr. Paul Furfey, Fred Yates, Jr., Dr. Doris Naiman, H. G. Royall, Jr., Mrs. Lillian Clark and Dr. Malcolm Norwood serving as speakers.

The banquet crowd Wednesday night was entertained with a rock gospel program presented by Rev. Rudy Gawlik and Pastor Dan Pokorny assisted by Dennis Cokely and Pam Minger interpreting the songs of a musical group called "Sons of Thunder." This singing was as good as any singing group you have seen on national television and the singing of the four interpreters was the best I have ever seen.

A dramatization entitled "Moral, Spiritual, Emotional Values" directed by Eric Malzkuhn of the Model Secondary School for the Deaf with several of his students participating was interesting, enlightening and thought provoking.

A youth rap session moderated by Frank R. Turk, National Director, Junior National Association of the Deaf, in which participants were secondary school and college students and college graduates was also interesting but not as informative as it could have been for the benefit of the hearing parents of deaf children in the audience.

In a letter from the Executive Director of COSD, Edward C. Carney, in May, 1973, he stated that, "Definite word from Social and Rehabilitation Services has not been received at this writing, but rumor has it that our grant support will not be renewed in September as was expected. Many programs for the deaf which have been supported by SRS, have been terminated. Foreseeing a drastic reduction in income and hoping to keep the basic Council concept in effect even if it becomes necessary to close the Home Office temporarily, the Executive Committee has decided to explore ways to cancel the remainder of the lease on the present quarters and find other suitable space.

Inasmuch as the annual Forum pays for itself, the Executive Committee has decided to continue with plans to hold Forum VII on schedule in Denver, Colorado, on March 13–15, 1974. Robert R. Lauritsen former COSD Board member, will serve as chairman. A planning committee now is in the formative stages."

Upon motion made and seconded, the report was approved.

President Turechek. Dr. Hoag will now report on the Council on Education of the Deaf.

REPORT ON THE COUNCIL ON EDUCATION OF THE DEAF

Ralph L. Hoag, Ed.D., Chairman,
Committee on Professional Preparation and Certification

STANDARDS FOR THE CERTIFICATION OF TEACHERS OF THE HEARING IMPAIRED

I am pleased to be able to announce that the long awaited publication of *CED Standards for the Certification of Teachers of the Hearing Impaired* is now ready for distribution. These standards were approved for adoption by the Conference of Executives of American Schools for the Deaf at its meeting in Little Rock in 1971, by the Convention of American Instructors of the Deaf also at Little Rock, and by the Board of Directors of the Alexander Graham Bell Association in November of 1971.

The document was then reviewed by the CED Executive Board in January of 1972 and adopted as its new program for the certification of teachers.

A brief history of the development of these standards is included in the publication in the foreword. A more comprehensive report of the activities of the various committees that worked on this report is included in the published reports of both the CEASD and the CAID meetings in Little Rock.

This certification program, now sponsored by the CED, is a continuation of the program formerly handled by the Conference of Executives. The program has always been open to all teachers who wished to receive the recognition it offered for the training they received.

Whatever impact the published standards document has on programs for the preparation of teachers will depend a great deal on how it is used by administrators of educational programs and those who are concerned with the preparation of teachers and how it is eventually used and regarded as reasonable standards for teachers in our field by those who are in both general and special education.

Since the CEASD played such a vital historical role in the development of training standards for our field, it is felt that a brief history of this and the contributions of the CAID and A. G. Bell organizations should be included in the record of this meeting.

The Conference of Executives of American Schools for the Deaf was the first professional group to develop and publish an agreed upon set of minimum standards for preparing teachers to work in this field. The work of this organization dates from 1930 at a time when most programs were school-centered, in-service type activities. They then set up a mechanism for the review and approval of such programs which subsequently influenced university affiliation, adoption, and sponsorship.

The certification program, initiated by the CEASD for all who wished to participate, provided a teacher with appropriate recognition for completing the recommended minimum program of professional preparation.

By 1969 over 6,000 persons applied for and were granted certificates. Recognition and general acceptance of the 1930 standards by the few programs in existence in the early days grew to 46 college and university programs in 1969. The later revision of the CEASD standards (1952) was used extensively as guidelines for the development of standards for licensing teachers by states, development of qualifications for teachers in State and local school programs, and by the U.S. Office of Education for the awarding of grants to institutions of higher education.

A number of national conferences have been held during the years following federal legislation in 1961 (P.L. 87–276) which provided financial support for the preparation of teachers of the deaf. The first among these, in 1964, was the Virginia Beach Conference on the Preparation of Teachers. Others that followed included the series of conferences on professional standards sponsored by the Council for Exceptional Children in 1965–66, the Colorado Conference on Education of the Deaf in 1967, and others. The published reports of these conferences included among their many recommendations that current standards for programs be revised and strengthened. Flexibility of guidelines for specialization, new knowledge about strategies and techniques for teaching, and use of technology and media were a few of the suggestions for inclusion.

If one were asked to identify a single major influence for change, from among the many already mentioned, the recommendation from those who attended the Virginia Beach Conference in 1964 was the strongest and most explicit. The pertinent language recorded on this topic is as follows:

> National standards should be established by a single organization representative of all or most of the persons involved in the teaching of deaf children and in the administration of teacher preparation programs . . . The Conference participants recommended that the Council on Education of the Deaf and the Conference of Executives of American Schools for the Deaf cooperate in establishing a committee within the CED, and that the membership of the committee be restricted only in that all members must be trained and experienced teachers of the deaf. Any standards set by such a committee would have legal status only to the extent that they were adopted by state certifying bodies.

Events occurred within the CEASD and the Council on Education of the Deaf during the several years following the Virginia Beach Conference. These events led to the implementation and final realization of the recommendation that grew out of that conference.

During 1968, an ad hoc joint study group was assigned the task of developing a preliminary standards document for the preparation of academic teachers of the deaf. This committee was made up of members from the Alexander Graham Bell Association, the Conference of Executives of American Schools for the Deaf, and the Convention of American Instructors of the Deaf.

In July of 1969 in Berkeley, California, a new committee on professional preparation and certification was established by the Executive Board of the CED and members were appointed. This action was taken following resolutions from its three member organizations that such a committee be established.

The new officially appointed CED committee was charged with the responsibility for working with all interested persons (including administrators; teachers; teacher educators; federal, state, and local officials; organizations; and the deaf community) toward the development of a set of updated standards. It was hoped that the committee would produce a universally acceptable set of standards that could be effectively used for the upgrading and improvement of programs eventually affecting personnel who work with hearing impaired children in our schools.

During 1969 a second ad hoc study group appointed by the Council was busy at work developing recommended standards for the preparation of vocational and other related special subject area teaching personnel. The report from this group was eventually merged with the earlier study group report containing recommended standards for the preparation of academic teachers.

The combined report prepared as a draft of proposed standards was widely circulated by the committee to state agency personnel, university program people, teachers, schools and classes for the deaf, and to the leadership of national organizations of the deaf. The topic of standards revision was put on the agenda of conventions of interested national organizations. Open discussion meetings were held at these conventions to get input from as many interested persons in our field as possible.

OPEN DISCUSSION MEETINGS HELD

Conference of Executives Meeting, St. Augustine, Florida, April, 1970.
Alexander Graham Bell Association Convention, Philadelphia, Pennsylvania, June, 1970.
National Association of State Directors of Special Education Meeting, Seattle, Washington, July, 1970.
National Association of the Deaf Convention, Minneapolis, Minnesota, August, 1970.
West Coast Special Open Forum, Berkeley, California, October, 1970.

It has taken the CED Committee two and one-half years to complete its assigned task. The results of these combined efforts are included in the published standards. These standards were formally adopted by the CED, with the consent and approval of its member organizations, on January 15, 1972. It is recognized that this effort is only the first step leading to others that must be taken to make these very basic standards work effectively for eventual improvement of instruction for children in our schools.

Copies of this publication were mailed to 3,000 persons which include administrators of schools and classes, teacher educators, State and Federal officials in education and certification, speech and hearing agencies and centers, administrators of rehabilitation services, offices of organizations of the deaf, directors of media centers, administrators of post-secondary programs for the deaf, and others.

The offices of A. G. Bell, CEASD, and CAID have copies of the publication and will handle requests for additional copies.

Recognition should be given to those who have served as past chairmen and secretaries of the earlier CEASD Committee on Teacher Training and Certification. The people who served in these capacities along with other members on the committee over the years since the beginning in 1930 have done an outstanding job. These include Dr. Thomas S. McAloney, Dr. Ignatius Bjorlee, Dr. Howard M. Quigley, and Dr. Kenneth R. Mangan who served as chairmen during the period 1931–1969 and Dr. Irving S. Fusfeld, Dr. Richard G. Brill, and Dr. Roy M. Stelle who served as secretaries during the same period.

Probably the most significant feature of this project, one that all of us as educators recognized as a priority need, was the process that was used to achieve. it. This document is the by-product of cooperation and combined efforts of persons representing the major organizations in our field directly concerned and involved in the education of seriously hearing handicapped children. It clearly illustrates that we as professionals in this very special field can work together effectively. Areas of definite agreement were identified, discussed, and recorded. As a result, this document should be much more useful to all of us.

There is no doubt in the minds of all of us that there are many other projects that we can and should work on together. The children we serve deserve no less than our total effort in their behalf.

The cooperation and assistance so willingly granted by officers of the three member organizations of the Council and the members of the Executive Board of CED who worked very closely with the committee every step of the way throughout the project are hereby acknowledged by the committee with gratitude.

These standards obviously represent only the first step in a series of activities that will have to be undertaken by the committee toward the goal of eventual implementation. As was done in the formulation of these standards, the process for implementation will be formulated with the help of all who are involved, concerned, and interested. Special assistance will be asked of those who are actually participating in the teacher preparation process in our colleges and universities.

The adoption of these standards marks a new milestone in the illustrious history of our profession. We now have an instrument that is designed to accommodate change. We begin now to test and evaluate the possible effect it can have on the eventual improvement of education for the children we serve.

EVALUATION OF PROGRAMS

The CED Committee on Professional Preparation and Certification together with special resource persons appointed to assist the committee by the Executive Board met in December of 1972 at the Lexington School for the Deaf.

This meeting produced a series of preliminary documents that are to be used for the review and evaluation of programs for the preparation of teachers of the deaf.

The certification program for educators in this field, conducted by the CEASD from 1930 to 1969, involved voluntary participation in an evaluation process by institutions offering programs for the professional preparation of teachers. By 1969, forty-six programs in institutions of higher education had been evaluated and identified as having approved programs within their institutions. After adoption of the program by the CED in 1969, the voluntary evaluation of programs in response to demand was continued. The CED Committee on Professional Preparation and Certification responded to these requests. To date, there are forty-eight college and university programs that have been evaluated and identified as having approved programs in their institutions.

Standards that have been proposed for use in future program review and evaluation activities by the CED Committee represent what our colleagues in teacher education feel should be included in an effective program for the preparation of teachers in this field. Hopefully, this document will be used by institutions involved in the process of self-evaluation of their program activities and by review panels representing the CED or other professional review committees that have been asked to evaluate programs.

The Committee on Professional Preparation and Certification at its conference in New York on program review and evaluation in December, 1972, proposed the following criteria to be used as a preliminary check list to assist interested institutions in determining the readiness of their programs for the preparation of teachers of the hearing impaired for a full program review.

1. The program should be sponsored and administered by an accredited institution of higher education.

2. The program should have at least one full-time qualified (CED certified) person on university faculty appointment with appropriate professorial rank in an existing department of the college or university (in graduate level programs, this staff person should have an earned doctorate) and in addition the program should have one full-time person or equivalent with necessary professional qualifications serving the program.

3. The program must provide a curriculum designed to provide students with special competencies as outlined by CED published standards in an identifiable area or areas of specialization.

4. The program should have a working affiliation with practicum facility(ies) related to the stated area of specialization.

5. The program should have information on the location of graduates whose performance can be evaluated.

6. The program should be operational with a number of students enrolled and the program should have identifiable requirements for selection.

7. The program should have readily available demonstration and observation facilities nearby or on campus that relate to the program's area of specialization.

8. The program should have readily available professional library resources.

9. The program should have access to other resources essential to teacher preparation:

Hearing and Speech Clinical Services
Educational Media Services
Educational Programs—general and special

10. The program should have adequate physical facilities on campus (classroom space; office space; conference area; seminar, work, and study areas; etc.)

11. The program should have an operationally effective program evaluation process.

12. The program should have a clear statement of justifications for its existence supported by evidence produced from a current needs survey conducted in the area served by the program (local, state, or national).

A set of standards for the evaluation of new programs as well as for periodic re-evaluation of previously approved programs for the preparation of teachers of the hearing impaired will be available soon. Drafts of the documents prepared by the Committee at its December, 1972, conference are in the process of being reviewed, edited, and evaluated.

The next several activities planned by the Committee are to test the evaluation procedures with new programs applying for program approval, test the program review procedure with on-going programs on a voluntary basis, and finalize the documents for CED approval as standards to be used by the Committee in the future evaluation of programs.

Upon a motion made and seconded the report was approved.

President TURECHEK. Mrs. Nancy Kensicki has asked for the floor.

Mrs. KENSICKI. On behalf of English teachers I present the following resolution for consideration:

Whereas, it is the acknowledged desire of all English teachers of the deaf to provide maximum knowledge and assistance to their pupils, and

Whereas, it is the purpose of the Convention of American Instructors of the Deaf to encourage and support all such legitimate aspiration of all teachers of the deaf everywhere, and

Whereas, it is the intention of the Convention of American Instructors of the Deaf that sections composed of professionals ultimately concerned with the transmission of information and the cooperation of those engaged in research, instruction and projects, function under the direction of said Convention, and

Whereas, there is no apparent organization of English teachers of the deaf, which is a necessity in regard to common language deficiencies of the deaf everywhere,

Therefore, it is so moved that the Convention of American Instructors of the Deaf recognize the creation of a section consisting of English teachers in secondary schools of the deaf and in colleges with programs for the deaf and in colleges of the deaf. This section is to be endowed with all the rights and privileges attributed to other sections at the direction of the Convention of American Instructors of the Deaf.

President TURECHEK. According to Article IV, Section 2, the Executive Committee shall designate the various sections of the Convention, and this motion may be out of order.

Further discussion was had to the effect that the constitution needed revision, along with the establishment of by laws, to clarify not only such questions as the one presently being considered, but other matters also.

After further discussion, upon motion made and seconded, Mrs. Kensicki's motion was tabled, and referred to the Executive Committee for consideration.

President Turechek reported the total registration for the meeting as 785.

President TURECHEK. I call upon Polly Shahan for a report from the Necrology Committee.

NECROLOGY COMMITTEE REPORT

Pauline (Polly) J. Shahan, Gallaudet College, Washington, D.C.

Name	Born	Died	Address
Anderson, Mamie M	May 17, 1904	Jan. 6, 1973	West Virginia Schools for the Deaf and the Blind, Romney; the Alexander Graham Bell School, Cleveland, Ohio.
Arline, Mrs. Helen J	June 16, 1906	Jan. 16, 1973	Alabama Institute for Deaf and Blind, Talladega.
Balasa, Joseph J	Dec. 7, 1902	June 28, 1972	Kentucky School for the Deaf, Danville.
Baughman, Virginia		May 28, 1972	American School for the Deaf, West Hartford, Conn.
Benson, Dr. Elizabeth E. (Benny)	Sept. 5, 1904	Dec. 13, 1972	Gallaudet College, Washington, D.C.; Borden General Hospital, Chickasha, Okla.
Bird, Mrs. Eleanor	Sept. 18, 1906	Aug. 21, 1972	Tennessee School for the Deaf, Knoxville.
Bolognone, John	Dec. 23, 1909	June 16, 1971	Ohio School for the Deaf, Columbus.
Bridges, Mrs. Mae	Nov. 13, 1901	Nov. 8, 1972	South Carolina School for the Deaf and the Blind, Spartanburg.
Brinson, Mrs. Barbara	Nov. 8, 1936	Apr. 30, 1973	Georgia School for the Deaf, Cave Spring.
Brown, Mrs. Bessie L			South Carolina School for the Deaf, Spartanburg.
Brown, Mrs. Ola Mary	Mar. 20, 1916	Feb. 5, 1972	Indiana School for the Deaf, Indianapolis.
Bryan, Don J	Dec. 11, 1928	Jan. 11, 1972	Indiana School for the Deaf, Indianapolis.
Burstein, Theresa Connors	July 25, 1925	Jan. 27, 1973	California School for the Deaf, Riverside; California School for the Deaf, Berkeley; Minnesota School for the Deaf, Faribault.
Carl, Faith	June 15, 1892	May 9, 1972	California School for the Deaf, Berkeley.
Carson, Roy	Sept. 15, 1914	Jan. 7, 1973	Missouri School for the Deaf, Fulton.
Cleary, Rosemary	Aug. 15, 1890	Feb. 6, 1973	Cleary School for the Deaf, Lake Ronkonkoma, N.Y.
Corwin, Mrs. Louise	Mar. 5, 1884	Apr. 11, 1972	Missouri School for the Deaf, Fulton.
Dixon, S. Helen		Feb. 1973	The Alexander Graham Bell School, Cleveland, Ohio.
Doctor, Dr. Powrie V. (Doc)	Aug. 7, 1903	July 31, 1971	Gallaudet College, Washington, D.C.
Doneghy, Susan Newlin	July 1, 1876	Dec. 28, 1971	Kentucky School for the Deaf, Danville.
Doucette, Reno		Feb. 5, 1973	American School for the Deaf, West Hartford, Conn.
Evans, Mrs. Ruth L	Dec. 10, 1907	Apr. 4, 1972	Western Pennsylvania School for the Deaf, Pittsburgh.
Failing, Dorothy Anderson	Feb. 17, 1902	Jan. 8, 1973	Willis and Elizabeth Martin School for Hearing Handicapped Children, Philadelphia.
Fanshaw, Mrs. Wanda	Sept. 15, 1932	Dec. 15, 1972	Georgia School for the Deaf, Cave Spring.
Farquhar, Mrs. Ethel	Feb. 22, 1892	Nov. 5, 1972	Missouri School for the Deaf, Fulton.
Farrar, Mrs. Helen M. Riedel	Aug. 31, 1902	Mar. 27, 1972	Utah Schools for the Deaf and the Blind, Ogden.
Feller, Sister Mary Loretta, B.V.M	July 18, 1925	Jan. 24, 1973	Holy Redeemer Day Class for the Deaf, Evergreen Park, Ill.
Grace, William F	Oct. 7, 1892	Mar. 5, 1973	Alabama Institute for Deaf and Blind, Talladega.
Groht, Dr. Mildred A		Dec. 13, 1971	Lexington School for the Deaf, New York, N.Y.
Halter, E. John		1972	California School for the Deaf, Riverside.
Hamel, Clara A	June 26, 1905	Apr. 21, 1972	Rochester School for the Deaf, Rochester, N.Y.
Harper, Mrs. Agnes		Nov. 1972	School for the Deaf, Junior High School 47, New York, N.Y.
Harris, Glenn I		Nov. 16, 1971	Montana School for Deaf and Blind, Great Falls; Colorado School for the Deaf and the Blind, Colorado Springs.
Hiten, Mrs. Addie	Oct. 2, 1901	Aug. 9, 1972	Alabama Institute for Deaf and Blind, Talladega.
Hobart, Marvel C	Sept. 17, 1898	June 5, 1972	Wisconsin School for the Deaf, Delavan.
Hopper, Eunice	Mar. 11, 1886	Apr. 7, 1973	Illinois School for the Deaf, Jacksonville.
Houston, Mrs. Hattie C	Oct. 4, 1892	May 10, 1972	Louisiana State School for the Deaf, Baton Rouge.
Hurst, Mrs. Lola	Dec. 12, 1890	Feb. 6, 1972	Alabama Institute for Deaf and Blind, Talladega.
Jaech, Rita Burgess	Oct. 24, 1937	Jan. 27, 1973	California School for the Deaf, Riverside.
James, Helen		Dec. 1972	The Alexander Graham Bell School, Cleveland, Ohio.
Jordan, Edith	Nov. 7, 1890	Mar. 2, 1972	Illinois School for the Deaf, Jacksonville.
Kingsley, Anna Mae	Sept. 2, 1885	Oct. 9, 1972	Illinois School for the Deaf, Jacksonville.
Koob, Ethel	Nov. 16, 1916	Apr. 22, 1973	Indiana School for the Deaf, Indianapolis.
Latham, Ina	Jan. 4, 1899	Feb. 4, 1973	Oregon State School for the Deaf, Salem.
Lauritsen, Mrs. Wesley (LaReine)	Dec. 6, 1898	Nov. 26, 1972	Minnesota School for the Deaf, Faribault.
Lee, Dr. Madison Johnson	Sept. 26, 1888	Oct. 17, 1971	Kentucky School for the Deaf, Danville.
Lindstrom, Dr. Thure A	Mar. 23, 1880	Mar. 21, 1973	Oregon State School for the Deaf, Salem.
Luebke, Melvin William	May 3, 1924	Oct. 27, 1972	Mill Neck Manor Lutheran School for the Deaf, Mill Neck Manor, N.Y.

NECROLOGY COMMITTEE REPORT—Continued

Pauline (Polly) J. Shahan, Gallaudet College, Washington, D.C.

Name	Born	Died	Address
Marsden, Michael		May 1973	Interprovincial School for the Education of the Deaf, Amherst, Nova Scotia, Canada.
Marshall, Alfred Ewen	June 11, 1905	Aug. 3, 1972	Kentucky School for the Deaf, Danville.
Marshall, Charles	Mar. 23, 1892	Dec. 2, 1972	Illinois School for the Deaf, Jacksonville.
Mellinger, Anna		1970	Arizona State School for the Deaf and the Blind, Tucson.
Merrilla, Arthur M	Sept. 30, 1894	May 4, 1973	North Carolina School for the Deaf, Morganton.
Mikesell, Frank E	Nov. 22, 1880	Feb. 16, 1973	Kansas School for the Deaf, Olathe.
Miller, Clarence E	Mar. 9, 1890	Dec. 14, 1972	Indiana School for the Deaf, Indianapolis.
Miller, Gertrude A	Oct. 14, 1892	Mar. 29, 1972	Kansas School for the Deaf, Olathe.
Minor, Mrs. Mary C	July 16, 1923	May 16, 1973	New York School for the Deaf, White Plains; Colorado School for the Deaf and the Blind, Colorado Springs.
Moberly, Vering S	Mar. 18, 1901	May 2, 1973	Kansas School for the Deaf, Olathe.
Norris, Arthur H., Sr	Nov. 8, 1877	Dec. 13, 1972	Indiana School for the Deaf, Indianapolis.
Oloman, Alderman R. Stavers		May 23, 1972	Royal National Institute for the Deaf, London.
Pearre, E. Emmett	Dec. 3, 1896	Dec. 30, 1972	Missouri School for the Deaf, Fulton.
Prichard, Doris Ann	Nov. 1, 1903	Nov. 19, 1971	Florida School for the Deaf and the Blind, St. Augustine.
Riley, Mrs. Mamie Thompson	Sept. 23, 1906	Mar. 31, 1973	Central Institute for the Deaf, St. Louis, Mo.; Iowa School for the Deaf, Council Bluffs; Ohio Day School Program, Hamilton; Kansas City School for the Deaf; Oklahoma City Day School Program; Baltimore Day School Program, Maryland; University of Oklahoma; Borden General Hospital during World War II.
Sellner, Mrs. Jean (Patterson)	Nov. 9, 1909	Apr. 20, 1972	California School for the Deaf, Berkeley.
Sheridan, Mrs. Helen	Jan. 31, 1919	Jan. 12, 1973	Oregon State School for the Deaf, Salem.
Smalls, J. Samuel	Mar. 25, 1913	Nov. 4, 1972	Marie H. Katzenbach School, West Trenton, N.J.
Stevenson, Dr. Elwood A	Apr. 3, 1892	Mar. 26, 1973	California School for the Deaf, Berkeley; Minnesota School for the Deaf, Faribault; Kansas School for the Deaf, Olathe; Kentucky School for the Deaf, Danville; New York School for the Deaf (Fanwood).
Stevenson, Joseph W	Mar. 5, 1902	Aug. 11, 1972	Maryland School for the Deaf, Frederick.
Switzer, Dr. Mary		Oct. 16, 1971	Washington, D.C.
Taylor, Mrs. Margaret Lonergan		May 29, 1973	American School for the Deaf, West Hartford, Conn.
Taylor, Mrs. Ruth	Feb. 27, 1895	May 29, 1972	Maryland School for the Deaf, Frederick.
Turner, Mrs. Mary	July 9, 1892	Feb. 28, 1973	Georgia School for the Deaf, Cave Spring.
Van Allen, K. C	May 11, 1898	Apr. 28, 1973	Interprovincial School for Education of the Deaf, Amherst, Nova Scotia, Canada.
Wait, Eugene			Tennessee School for the Deaf, Knoxville.
Webber, Mrs. Elizabeth Munnerlyn	Sept. 10, 1913	Nov. 11, 1972	South Carolina School for the Deaf and the Blind, Spartanburg.
Williams, Mrs. Judith	Aug. 22, 1943	May 6, 1972	Gallaudet College, Washington, D.C.

Upon motion duly made and seconded this report was approved.

President Turechek. Thank you, Polly. We will now hear from the resolutions committee, Floyd McDowell.

REPORT OF RESOLUTIONS COMMITTEE

Floyd J. McDowell, Great Falls, Montana

RESOLUTION NO. 1

Being aware of the unlimited time and effort required in making plans for the Convention meeting: be it

Resolved, That the members attending this convention express through this resolution their most sincere appreciation to Superintendent and Mrs. Lamb, and the staff and students of the Indiana School for the Deaf, and those who entertained at the various convention functions and all who contributed to the arrangements for the success of the meeting.

RESOLUTION NO. 2

Being privileged to have held the 46th meeting of the Convention in the city of Indianapolis at the Marott Hotel headquarters, and Stouffer's Inn, and the campus of the Indiana School for the deaf: be it

Resolved, That the members attending this meeting express through this resolution their most sincere appreciation to the Honorable Otis Bowen, Governor of Indiana, the members of the board of the Indiana School for the Deaf, the Honorable Richard Lugar, Mayor of Indianapolis and to the staff and management of the hotels for the use of these excellent facilities.

RESOLUTION NO. 3

Be it resolved, That appreciation be extended to Dr. Armin Turechek, president, and his officers for outstanding leadership of the Convention of American Instructors of the Deaf.

That appreciation be extended to Mr. Robert T. Dawson, program chairman, and his capable staff for the excellent organization of the program.

That thanks be extended to Henry Bjorlie and assigned interpreters, who graciously gave of their time to make the proceedings more valuable for those auditorily impaired.

RESOLUTION NO. 4

Whereas the number of instructional aides is increasing in programs for the deaf; and

Whereas these paraprofessionals do not have representation in any organization; and

Whereas, standards of training and role descriptions have not been established: be it

Resolved, That the CAID establish a committee to study the feasibility of forming a section of the CAID for instructional aides, and that training standards and role descriptions be established.

RESOLUTION NO. 5

Be it resolved, That the membership express by this resolution its recognition and appreciation for the meritorious services and leadership in the education of the deaf given through many years by the following deceased leaders—Dr. Elwood Stevenson, Dr. Powrie Doctor, Dr. Elizabeth Benson, Dr. Madison Lee, Dr. Mary Switzer, Lyndon Baines Johnson, Glenn I. Harris, and Melvin Luebke.

Following a motion made and seconded, the resolutions were adopted.

Some discussion developed as to the method of electing officers and directors, the consensus being that a better method should be formulated. Mr. McDowell of Montana moved, subject to any amendment desired, that the incoming officers of the Convention form a committee to revise the constitution, for consideration and adoption at the next biennial meeting.

There were several seconds to the motion.

Ellery Adams of Los Angeles moved to amend the motion to include writing of bylaws, which would include rules for elections and other procedures.

Mr. McDowell stated he had intended to include that in his original motion, and would accept the amendment.

Upon a show of hands the motion, as amended, was adopted by the membership.

There being no further business, the meeting was adjourned.

ACTIONS OF THE EXECUTIVE COMMITTEE FOR THE BIENNIUM

July 13, 1971—CAID Ballot

I. Selection of invitations to host the 1975 Convention of American Instructors of the Deaf between Atlantic City, N.J. and Morganton, N.C.

2, Atlantic City, N.J.; 8, Morganton, N.C.

December 13, 1971—CAID Ballot

II. Request from Council of Organizations Serving the Deaf for financial support in the amount of $1,000.

For, 6; Against, 4.

December 13, 1971—CAID Ballot

III. Request for Council of Organizations Serving the Deaf for financial sharing in the cost of a reception at the Forum in Memphis, Tennessee, not to exceed $200.00.

For, 9; Against, 1.

March 24, 1972—CAID Ballot

IV. Request for approval of change in name from Parents Section of the Convention of American Instructors of the Deaf to the International Association of Parents of the Deaf.

For, 10; Against, 0.

March 24, 1972—CAID Ballot

V. Request from Parents Section (International Association of Parents of the Deaf) for financial support in the amount of $500 for publications and postage.

For, 10; Against, 0.

November 14, 1972—CAID Ballot

VI. Request for approval of accepting Tele-Typewriters for the Deaf as a member of the Council of Organizations Serving the Deaf.

For, 10; Against, 0.

October 2, 1972—CAID Ballot

VII. (a) Request to pay fees and transportation for guest speakers at the 46th Biennial Convention of American Instructors of the Deaf.

For, 10; Against, 0.

(b) Maximum amount to be spent for speakers.

$100—1; $100 plus expenses—1; $500 per speaker—5; $1,500—1; $2,000—1.

October 2, 1972—CAID Ballot

VIII. (a) Offering workshops in connection with the Convention with the excess cost being assumed by the Convention.

For, 9; Against, 1.

(b) Recommended number of workshops to be sponsored.

1—1; 2—2; 4—2; 4 or 5—1; 3—1.

INDEX

A — Page

Act of Incorporation vi
Adams, David N. and Edward W. Scott, sex education and drug abuse 546
Adams, Ellery J., invitation for the 1977 meeting, CAID 749
Address, Otis R. Bowen, Governor, State of Indiana 51
Admissions program, an experimental, Bernard L. Greenberg 287
Alexander, Alma L., the effectiveness of visible English and the combined system in language acquisition 53
Alexander, Mildred:
  Taking English to parents and preschoolers 74
  The development of the self-concept 78
Alsobrook, James V., financial problems of athletic programs 85
1973 annual report, the, the National Advisory Committee on Education of the Deaf, Nanette Fabray MacDougall 404
Annual survey of hearing impaired children and youth, current activities of the, Peter Ries (no paper submitted).
Anthony, Henrietta, learning disabilities—detection, diagnosis, remediation 85
Apple tree—a structured approach to language, Janis Caniglia, Norma Jean Cole, Wyman Howard, Emmylou Krohn, and Marcia Rice 636
Archambault, Patricia A., speech improvement for deaf adolescents 101
Associate editor, Sarah W. Toomer v
Athletic programs, financial problems of, James V. Alsobrook 85
Audiological management of infants—birth to 3 years, Ann Sitton and Janet Coscarelli 646
Audiometrically hard of hearing, deaf child, the, Jerry E. Prokes 511
Auditory research at Gallaudet College, Ellen Martin Danaher and James M. Pickett 643
Auditory training for hearing impaired children, programing a sequential program of, Alice N. Bailey and Leslie W. Jones 686
Auditory training, preschool verbotonal, Ellen B. Young 633
Auditory training, principles of, Charles H. Sessler 566

B

Bailey, Alice N. and Leslie W. Jones, programing a sequential program of auditory training for hearing impaired children 686
Baker, Mary, Josephine Diagonale, and Ellen Erikson, people to people: The English classroom 678, 679
Baker, Mary, and Betty Rosenbloom, video stories (Model Secondary School for the Deaf presentation) 678
Baldwin, Richard L., an investigation of sensory input change in the speech discrimination behavior of a preschool child 110
Ballots, CAID 756, 766
Barkuloo, Herbert W., trends and issues in day school secondary programs 117
Batstone, Gary W., response from Canada 50
Behavioral management with students, tangibles and intangibles of, Lewis B. Wahl 623
Behavior modification techniques as utilized at the Kansas State School for the Deaf, Patty Moylan 424
Bishop, Milo, panel presentation: Recent research on speech and hearing in the deaf and its relevance to the classroom teacher (no paper submitted).
Blanton, William E., the management of reading instruction 121
Boothroyd, Arthur, teacher/researcher interaction: A model and an example 122
Bowen, Otis R., Governor, State of Indiana, address 51

Page

Brasel, Barbara Babbini, Dale S. Montanelli and Stephen P. Quigley, interpreters for deaf people—a study of methods of evaluation, classification and selection 672
Brelje, H. William, a study of the relationship between the articulation and vocabulary of hearing impaired parents and their normally hearing children 130
Bryan, Ann, the teaching of speech as a part of total communication 149
Burgdorf, Marcia, legal rights of the handicapped (banquet speaker) (no paper submitted).
Burns, Mary Ann, on turning on—to a world full of sound 153
Burroughs, Judith R., a model for meeting the challenge of relevant diagnostic assessment 160
Burnstein, Gerald:
  Letter of submittal iv
  Treasurer's report 750, 751, 752
Burton, Charles A., and Marilyn P. Nugent, a social learning curriculum—an alternative for the noncollege bound student 717
Business sessions, June 26, June 28 743
Bylaws of the Convention of American Instructors of the Deaf, writing of, see Resolution No. 5 765

C

Call, Michaele Powell, parent, teacher, child—getting it together 163
Caniglia, Janis, Norma Jean Cole, Wyman Howard, Emmylou Krohn, and Marcia Rice, apple tree—a structured approach to language 636
Capitalizing the I in diagnostics, Margaret L. Haines 290
Career development in the education of the deaf—a program model (panel), Ralph L. Hoag, Harold L. Munson and William J. Howard 650
Career development in the education of the deaf: A program rationale, Harold L. Munson 654
Career development program, educational strategies and administrative considerations for an effective, Ralph L. Hoag 651
Career education at the Marie H. Katzenbach School for the Deaf—something for everyone, James P. Lenox 383
Career education, development, implementation and mediation, Darrel Randall 517
Career opportunities for the deaf, new vistas in, William E. Castle (no paper submitted).
Carroll, John P., counseling: To help a person become 170
Castle, William E., new vistas in career opportunities for the deaf (no paper submitted).
Center for Continuing Education at Gallaudet College, the—a progress report, Thomas A. Mayes 396
Certificates of merit, CAID–CEASD joint cetrificates, report on, Howard M. Quigley 754
Clark, Charlotte R. and Donald F. Moores, Minnesota early language development sequence (MELDS) 676
Classroom observation under conditions of simulated profound deafness, Norman P. Erber and M. Lynn Zeiser 661
Clouser, Richard A., relationships between visual speech reception and linguistic features of sentences 172
Cognition and learning, Piaget workshop, Sydney Wolff 628
Cole, Norma Jean, et al, apple tree—a structured approach to language 636
Coleman, Lynn, individual reading 186
Collins, James L., teaching, learning, and mental health 194
Committees, reports, see: CAID 46th biennial meeting, reports, below.
Communication: Key to education, Roslyn Rosen 527
Computer-assisted instruction—a teaching tool, Grace Kanz 352
Concurrent resolution, 93d Congress of the United States ii
Conkey, Harlan, William M. Erickson, James E. McCarr, and Benjamin P. Purvis, a progress report on the development of the Oregon State School for the Deaf language achievement test 696
Constitution, CAID 1
  Proposed revision of, See: Resolution No. 5 765
Continuing Education at Gallaudet College, the Center for—A progress report, Thomas A. Mayes 396

Page

Convention of American Instructors of the Deaf, 46th biennial meeting:
  Act of incorporation vi
  Ballots of executive committee for the biennium, 1971–73 765, 766
  Business sessions, June 26, June 28 743
  Bylaws, proposed 765
  Committee reports, see: Reports, below
  Constitution 1, 765
  Executive Committee Report for the Biennium, 1971–73 765
    See: Reports, national office, below 754
    See: Officers ix
  Interpreters 44, 764
  Invitations for 1975 and 1977 convention meetings 749, 765
  Meetings of; 1850–1973 vii
  Membership, list of 4
    See: Reports, national office, below
  Officers, 1971–73; 1973–75 ix, 744
  Parents section, see: Ballot IV, V, remarks of President Turechek 747, 765
  Photograph 46
  Presidents, list of viii
  Program, 46th biennial meeting 47
  Reports:
    Council on Education of the Deaf 756
    Council of Organizations Serving the Deaf 754
    Houseparents section 748
    National office 753
    Necrology Committee 762
    Newsletter Committee 747
    Nominating Committee 743
    President 744
    Resolutions Committee 763
    Treasurer 750, 751, 752
Cory, Winnifred, the "special" deaf child 205
Coscarelli, Janet, and Ann Sitton, audiological management of infants—birth to 3 years 646
Costello, Sister Maura, the various aspects of growth in reading on a primary level 199
Council of Organizations Serving the Deaf:
  Report, Edward W. Reay 754
  CAID ballots, II, III, VI 765, 766
Council on Education of the Deaf, report, Ralph L. Hoag 756
Counseling: To help a person become, John P. Carroll 170
Critical variables in programing for the deaf-blind child, Edwin K. Hammer 300
Current activities of the annual survey of hearing impaired children and youth, Peter Ries (no paper submitted).
Curriculum development, a public school plan for regional program and, Kenneth L. Rislov 532

D

Danaher, Ellen Martin, and James M. Pickett, auditory research at Gallaudet College 643
Das, Khogendra N., status report on mid-Atlantic (north) and Caribbean regional deaf-blind center 211
Davis, Anne N., Me, myself and who? Or how the deaf child looks at himself 214
Davis, Ferne E., editor, Foreword v
Dawson, Robert T., program chairman, see Resolution No. 3 764
Day school secondary programs, trends and issues in, Herbert W. Barkuloo 117
Deaf-blind center, status report on mid-Atlantic (north) and Caribbean regional, Khogendra N. Das 211
Deaf-blind child, critical variables in programing for the, Edwin K. Hammer 300
Deaf-blind children and youth—committee on standards, the North American Committee on Services for, Verna Hart 309
Deaf-blind children at the Western Pennsylvania School for Blind Children, Pittsburgh, educational project for, Janet Klineman 363

Deaf-blind children—education communication (panel), Harold G. Roberts (no paper submitted).

Page

Deaf-blind children in Michigan, services to—slide presentation with tape presentation, Sandy Skubick, et al 712

Deaf-blind children, measuring progress in, Robert D. Stillman 587

Deaf-blind program at the West Virginia Schools for the Deaf and the Blind, Eldon E. Shipman 576

Deaf children's understanding of relative clauses and negation, W. Keith Russell, Nick L. Smith, and Stephen P. Quigley 666

Deaf studies in the English curriculum, Robert F. Panara 461

Degler, John M., prevocational and vocational (job oriented) programs in schools for the deaf 218

Delgado, Gilbert L., Gallaudet College, the graduate school—present and prospects 221

Delgado, Gilbert, and E. Ross Stuckless, postsecondary facilities for the deaf (no paper submitted).

Denton, David M., language acquisition through total communication 224

Developmental vision, Stephen Sindlinger 583

Development, implementation and mediation of career education, Darrel Randall 517

Development of nontraditional educational programs, William D. Grant 279

Development of the self-concept, the, Mildred Alexander 78

Diagnosis of a child's deafness, psychodynamics surrounding the, McCay Vernon 616

Diagnostic assessment, a model for meeting the challenge of relevant, Judith R. Burroughs 160

Diagnostics, capitalizing the I in, Margaret L. Haines 290

Diagonale, Josephine, et al, People to people: The English classroom 678, 679

Diagonale, Josephine, and Ben Schowe, Jr., workshop—writing 678

Dicker, Leo, implementing a philosophy of total communication in teacher preparation programs 226

Dormitory personnel as professionals, Peter H. Ripley 523

Drug abuse, sex education and, Edward W. Scott and David N. Adams 546

E

Early education, Audrey Simmons-Martin 577

Early education, the effect of, Roy K. Holcomb 320

Early, George H., learning disabilities: A developmentally based diagnostic-remedial approach 228

Early start with visible English, an, Eleanor P. Scouten 564

Editor, Ferne E. Davis v

Educational films for the hearing impaired, Robert LaGow 374

Educational project for deaf-blind children at the Western Pennsylvania School for Blind Children, Pittsburgh, Janet Klineman 365

Educational strategies and administrative considerations for an effective career development program, Ralph L. Hoag 651

Edwards, Robert M., programed instruction: It's worth your consideration 236

Effective teaching via drama, George William Johnston 335

Effectiveness of visible English and the combined system in language acquisition, the, Alma L. Alexander 53

Effect of early education, the, Roy K. Holcomb 320

Elings, Virgil B., et al, SPOT (special phoneme optical translator). A visual speech training device 725

English as a function on the postsecondary level, Edward L. Scouten 557

English classroom, the, people to people: Mary Baker, et al 678, 679

English curriculum, deaf studies in the, Robert F. Panara 461

English teachers of the deaf, proposed creation of a section on, under the CAID, Nancy Kensicki 761

Erber, Norman P., and M. Lynn Zeiser, classroom observation under conditions of simulated profound deafness 661

Erickson, William M., et al, progress report on the development of the Oregon State School for the Deaf language achievement test 696

Erikson, Ellen, et al, people to people: The English classroom 678, 679

Erikson, Ellen, and Linda Risser, grouptalk 678

Executive committee report for the biennium, 1971–73 765

Page

- Experiment in latitudinal learning—the open classroom, an, Rosemary Garrity 261
- Experimental admissions program, an, Bernard L. Greenberg 287

F

- Fauth, Warren, section leader, junior-senior high (vocational and post-secondary), See: Section meetings 44
- Film-making, workshop, George McClendon and Sarah Val 678
- Films for the hearing impaired, educational, Robert LaGow 374
- Financial problems of athletic programs, James V. Alsobrook 85
- Fitzgibbon, Sister Catherine, the young teen age deaf and reading 239
- Foreword v
- Freeman, Jerome, section leader, special interest; see: Section meetings 44
- Frisina, Robert, National Technical Institute for the Deaf 243
- Furth, Hans G., the role of language in the child's development 258

G

- Gallaudet College—present and prospect, Thomas Mayes 402
- Gallaudet College "present and prospects"—undergraduate program, John S. Schuchman 543
- Gallaudet College, the graduate school—present and prospects, Gilbert L. Delgado 221
- Garrity, Rosemary, an experiment in latitudinal learning—the open classroom 261
- Golf, Helen R., strategies for teaching 4- and 8-year olds 267
- Gonzales, B. Robert, the media specialists program for the deaf—1973. University of Massachusetts School of Education 271
- Grant, William D., development of nontraditional educational programs 279
- Great Southwest Ranch School for the Deaf, Inc., the—a national dream, Antonio T. Iannarone 330
- Greenberg, Bernard L., an experimental admissions program 287
- Greetings:
  - Host school, Alfred J. Lamb 48
  - State of Indiana, William T. Pyanter 49
- Grouptalk, Ellen Erikson and Linda Risser 678

H

- Haines, Margaret L., capitalizing the I in diagnostics 290
- Hammer, Edwin K., critical variables in programing for the deaf-blind child 300
- Harper, Phyllis, parent-pupil education: A three-dimensional approach 304
- Hart, Verna, the North American Committee on Services for Deaf-Blind Children and Youth—committee on standards 309
- Hicks, Doin E., nontraditional education programing for deaf high school students (no paper submitted).
- Hoag, Ralph L., Harold L. Munson, and William J. Howard:
  - Career development in the education of the deaf—a program model (panel) 650
  - Educational strategies and administrative considerations for an effective career development program 651
  - Report on Council on Education of the Deaf 756
  - Standards for the certification of teachers of the hearing impaired report, Committee on Professional Preparation and Certification, CED 756
- Hodgson, John W., use of media in vocational training 311
- Hoff, Joel R., section leader, nursery-preschool; See: Section meetings 44
- Holcomb, Roy K.:
  - The effect of early education 320
  - Total communication is a must 323
- Houk, Judith Carson, independence . . . through parent education 325
- Houseparent section, report, Peter H. Ripley 748
- Howard, William J., et al:
  - Career development in the education of the deaf—a program model (panel) 650
  - Initial strategies for enhancing vocational learning-maturation 658

Page

Howard, Wyman, et al, apple tree—a structured approach to language 636
Huff, Anna, library-media (ARPSHI business meeting) (no paper submitted).

I

Iannarone, Antonio T., the Great Southwest Ranch School for the Deaf, Inc., a national dream 330
Implementing a philosophy of total communication in teacher preparation programs, Leo Dicker 226
Independence . . . through parent education, Judith Carson Houk 325
Individual instruction and the math learning center concept, John Kubis 372
Individual reading, Lynn Coleman 186
Initial strategies for enhancing vocational learning-maturation, William J. Howard 658
Instructional aides, proposed section of the CAID; see Resolution No. 4 764
Interpreters for deaf people—a study of methods of evaluation, classification and selection, Barbara Babbini Brasel, Dale S. Montanelli and Stephen P. Quigley 672
Interpreters:
  List of 44
  See: Resolution No. 3 764
Introduction to, action plus reaction equals interaction, Ben Schowe, Jr 678
Investigation of sensory input change in the speech discrimination behavior of a preschool child, an, Richard L. Baldwin 110
Invitation for:
  1975 CAID meeting, Ballot I 765
  1977 CAID meeting, Ellery J. Adams 749

J

James, J. Michael, the math learning center: A viable concept in learning 333
Johnston, George William, effective teaching via drama 335
Jones, Leslie W. and Alice N. Bailey, programing a sequential program of auditory training for hearing impaired children 686
Jones, Ray L., the Northridge Training Model (NTM): Background for evaluation design 344

K

Kanz, Grace, computer-assisted instruction, a teaching tool 352
Karp, Barry, et al, services to deaf-blind children in Michigan—slide presentation with tape presentation 712
Kemp, Don, et al, services to deaf-blind children in Michigan—slide presentation with tape presentation 712
Kensicki, Nancy, proposed resolution on creation of section of English teachers of the deaf, in CAID 761
Kent, Margaret S., a language environment for the profoundly deaf child 358
Klineman, Janet, educational project for deaf-blind children at the Western Pennsylvania School for Blind Children, Pittsburgh 363
Koelkebeck, Mary Lou, a rhythm program for deaf children 366
Kritz, Kenneth, section leader, junior–senior high (academic); see: Section meetings 44
Krohn, Emmylou, et al, apple tree—a structured approach to language 636
Kubis, John, individual instruction and the math learning center concept 372

L

LaGow, Robert, educational films for the hearing impaired 374
Lamb, Alfred J.:
  Greetings from Indiana School for the Deaf 48
  See: Resolution No. 1 763
Language achievement test, a progress report on the development of the Oregon State School for the Deaf, Harlan Conkey, et al 696
Language acquisition in deaf children, Alfred H. White 631
Language acquisition, the effectiveness of visible English and the combined system in, Alma L. Alexander 53
Language acquisition through total communication, David M. Denton 224

Page

Language, apple tree—a structured approach to, Janis Caniglia, et al 636
Language development sequence (MELDS), Minnesota early, Charlotte R. Clark and Donald F. Moores 676
Language environment for the profoundly deaf child, a, Margaret S. Kent 358
Language in the child's development, the role of, Hans G. Furth 258
Language for the functionally retarded deaf teenager, Marny Worden Olson 451
Lauritsen, Robert R., postsecondary regional programs for deaf students 380
Learning disabilities: A developmentally based diagnostic-remedial approach, George H. Early 228
Learning disabilities—detection, diagnosis, remediation, Henrietta Anthony 85
Legal rights of the handicapped, Marcia Burgdorf (banquet speaker) (no paper submitted).
Lenox, James P., something for everyone—career education at the Marie H. Katzenbach School for the Deaf 383
Letter of submittal, Gerald Burstein iv
Letter of transmittal, Edward C. Merrill, Jr iii
Library-media (ARPSHI business meeting), Anna Huff (no paper submitted).
Litchfield, Kendall D., a training program for professional after-class staff in residential schools for the deaf 387
Looney, Patricia, psycholinguistic approaches to reading (no paper submitted).
Lowell, Edgar L., Virgil B. Elings, and David T. Phillips, SPOT (special phoneme optical translator), a visual speech training device 725
Lowell, Neil F., and Larry Quinsland, vision utilization training for deaf children 736

M

MacDougall, Nanette Fabray, the 1973 annual report, the National Advisory Committee on Education of the Deaf 404
Maintaining and building upon the basic foundation of speech, Marcia Faier Tash 599
Management of reading instruction, the, William E. Blanton 121
Marshall, William J. A., a prototypical systems model for the delivery of media services to the handicapped 390
Martin, Edwin W., Jr., new directions in Federal programs (speaker, second general session), (no paper submitted).
Materials for the last 4 years, John R. Olson, Sr 443
Math learning center concept, individual instruction and the, John Kubis 372
Math learning center, the: A viable concept in learning, J. Michael James 333
Mayes, Thomas A.:
  The Center for Continuing Education at Gallaudet College—a progress report 396
  Gallaudet College—present and prospect 402
McCarr, James E., et al, progress report on the development of the Oregon State School for the Deaf language achievement test 696
McClendon, George and Sarah Val, Workshop—film-making 678
McClendon, George, editor, Film—Action + Reaction = Interaction 678
McClure, William J., student management 732
McDowell, Floyd J., resolutions committee, report 763
Measuring progress in deaf-blind children, Robert D. Stillman 587
Media horizons, Malcolm J. Norwood 434
Media in vocational training, use of, John W. Hodgson 311
Media services to the handicapped, a prototypical systems model for the delivery of, William J. A. Marshall 390
Media specialists program for the deaf—1973. University of Massachusetts School of Education, B. Robert Gonzales 271
Meeting social needs of the deaf child in the residential school, Olaf Tollefson 612
Meetings, list of, 1850–1973, CAID vii
Membership, CAID:
  List of 4
  Report on, Howard M. Quigley 753

Page

Me, myself and who? Or how the deaf child looks at himself, Anne N. Davis 214
Merrill, Edward C., Jr., letter of transmittal iii
Minnesota early language development sequence (MELDS), Charlotte R. Clark and Donald F. Moores 676
Minton, Nita M., the slow learner as an individual 414
Model for meeting the challenge of relevant diagnostic assessment, a, Judith R. Burroughs 160
Model Secondary School for the Deaf:
  Department of English, Washington, D.C.—presentation 678
  Student management at the, Don G. Pettingill 477
Montanelli, Dale S., et al, interpreters for deaf people—a study of methods of evaluation, classification and selection 672
Moog, Jean, strategies for teaching 3- and 4-year-old hearing-impaired children 422
Moon, Mary Alice, section leader, kindergarten-primary; See: section meetings 44
Moores, Donald F. and Charlotte R. Clark, Minnesota early language development sequence (MELDS) 676
Moylan, Patty, Behavior modification techniques as utilized at the Kansas State School for the Deaf 424
Multiply disabled deaf children to teacher training programs, the relationship of programs for, Jacob F. Pino 490
Munson, Harold L., et al:
  Career development in the education of the deaf—a program model (panel) 650
  Career development in the education of the deaf: a program rationale 651
Murphy, Harry J., The Northridge plan for post-secondary education 430
My not-so-secret love, MIVR (Merv), Helen Ross Sewell 573

N

Naiman, Doris W., A prototype training program for professional afterclass staff in residential schools for deaf children 432
National Advisory Committee on Education of the Deaf, priority recomdations of the, Frank Withrow 405
National Advisory Committee on Education of the Deaf—the 1973 annual report, Nanette Fabray MacDougall 404
National office CAID, report, Howard M. Quigley 753
National Technical Institute for the Deaf, Robert Frisina 243
Necrology committee, report, Pauline Shahan 762
New directions in Federal programs, Edwin W. Martin, Jr. (no paper submitted).
Newsletter:
  Report, Goldie Trboyevich 747
  Report on, Howard M. Quigley 753
New vistas in career opportunities for the deaf, William E. Castle (no paper submitted).
Nominating committee, report, Eldon Shipman 743
Nontraditional education programing for deaf high school students, Doin E. Hicks (no paper submitted).
North American Committee on Services for Deaf-Blind Children and Youth—committee on standards, the, Verna Hart 309
Northridge plan for post-secondary education, the, Harry J. Murphy 430
Northridge Training Model (NTM), the: background for evaluation design, Ray L. Jones 344
Norwood ,Malcolm M., Media horizons 434
Nugent, Marilyn P. and Charles A. Burton, a social learning curriculum—an alternative for the noncollege bound student 717
Nygren, Carolyn, observational research on an educational program 438

O

Observational research on an educational program, Carolyn Nygren 438
Officers, CAID, 1971–73; 1973–75 ix, 744
Old whines, new battles, Hollis W. Wyks 625
Olson, John R., Sr., materials for the last 4 years 443

Page

Olson, Marny Worden, Language for the functionally retarded deaf teenager 451
On turning on—to a world full of sound, Mary Ann Burns 153
Open classroom, the—an experiment in latitudinal learning, Rosemary Garrity 261

P

Panara, Robert F., deaf studies in the English curriculum 461
Parent education, independence . . . through, Judith Carson Houk 325
Parent-pupil education: a three-dimensional approach, Phyllis Harper 304
Parent, teacher, child—getting it together, Michaele Powell Call 163
Parents and preschoolers, taking English to, Mildred Alexander 74
Parents section of CAID:
  Ballot IV, V 765
  See: remarks by President Turechek 747
Penrod, Walter J., rehabilitation and the post-secondary deaf client 468
People to people: the English classroom, Mary Baker, Josephine Diagonale and Ellen Erikson 678, 679
Percussion instruments—tools for creativity, Virginia W. Schatz 536
Pettingill, Don G., Student management at the Model Secondary School for the Deaf 477
Pfau, Glenn S., Project LIFE—Language Improvement to Facilitate Education: A multimedia instructional system for the deaf child 479
Phillips, David T., et al, SPOT, (special phoneme optical translator). A visual speech training device 725
Photograph, CAID 46
Piaget workshop—cognition and learning, Sydney Wolff 628
Pickett, James M. and Ellen Martin Danaher, auditory research at Gallaudet College 643
Pino, Jacob F., the relationship of programs for multiply disabled deaf children to teacher training programs 490
Post-secondary deaf client, rehabilitation and the, Walter J. Penrod 468
Post-secondary education, the Northridge plan for, Harry J. Murphy 430
Post-secondary facilities for the deaf, E. Ross Stuckless and Gilbert L. Delgado (no paper submitted).
Post-secondary regional programs for deaf students, Robert R. Lauritsen 380
Powell, Frank W., A systems approach to individualizing instruction for deaf children 494
Preschool verbotonal auditory training, Ellen B. Young 633
Presidents, CAID, list of viii
President's report (Armin G. Turechek) 744
Prevocational, (job oriented), programs in schools for the deaf, John M. Degler 218
Principles of auditory training, Charles H. Sessler 566
Priority recommendations of the National Advisory Committee on Education of the Deaf, Frank Withrow 405
Program, 46th meeting of CAID, June 24–29, 1973 47
Programing a sequential program of auditory training for hearing, impaired children, Leslie W. Jones and Alice N. Bailey 686
Programed instruction: It's worth your consideration, Robert M. Edwards 236
Progress report on the development of the Oregon State School for the Deaf language achievement test, Harlan Conkey, William M. Erickson, James E. McCarr and Benjamin P. Purvis 696
Project LIFE—language improvement to facilitate education: A multimedia instructional system for the deaf child, Glenn S. Pfau 479
Prokes, Jerry E., the audiometrically hard of hearing, deaf child 511
Prokes, Linda, section leader, Intermediate; see: section meetings 44
Propp, George, teacher education—secondary level (no paper submitted).
Prototype training program for professional afterclass staff in residential schools for deaf children, Doris W. Naiman 432
Prototypical systems model for the delivery of media services to the handicapped, a, William J. A. Marshall 390
Psychodynamics surrounding the diagnosis of a child's deafness, McCay Vernon 616
Psycholinguistic approaches to reading, Patricia Looney (no paper submitted).

Page
Public school plan for regional program and curriculum development, Kenneth L. Rislov 532
Purvis, Benjamin P., et al., progress report on the development of the Oregon State School for the Deaf language achievement test 696
Pyanter, William T., greetings from State of Indiana 49

Q

Quigley, Howard M., report on national office, CAID 753
Quigley, Stephen P., et al, deaf children's understanding of relative clauses and negation 666
Quigley, Stephen P., Interpreters for deaf people—a study of methods of evaluation, classification and selection 672
Quinsland, Larry and Neil F. Lowell, vision utilization training for deaf children 736

R

Randall, Darrel, development, implementation and mediation of career education 517
Reading, individual, Lynn Coleman 186
Reading instruction, the management of, William E. Blanton 121
Reading on a primary level, the various aspects of growth in, Sister Maura Costello 199
Reading, the young teen-age deaf and, Sister Catherine Fitzgibbon 239
Reay, Edward W., report on Council of Organizations Serving the Deaf 754
Recorders, list of 45
Reduction of standing up behavior through token reinforcement, Martha Tims 608
Reed, Richard, section leader, upper primary; see: Section meetings 44
Rehabilitation and the post-secondary deaf client, Walter J. Penrod 468
Relationship of programs for multiply disabled deaf children to teacher training programs, the, Jacob F. Pino 490
Relationships between visual speech reception and linguistic features of sentences, Richard A. Clouser 172
Reports (Committee):
- Council on Education of the Deaf, Ralph L. Hoag 756
- Council of Organizations Serving the Deaf, Edward W. Reay 754
- Houseparents section, Peter H. Ripley 748
- National Office, Howard M. Quigley 753
- Necrology Committee, Pauline Shahan 762
- Newsletter Committee, Goldie Trboyevich 747
- Nominating Committee, Eldon Shipman 743
- President, Armin G. Turechek 744
- Resolutions Committee, Floyd J. McDowell 763
- Treasurer, Gerald Burstein 750, 751, 752

Researcher interaction, teacher/: A model and an example, Arthur Boothroyd 122
Resolutions Committee, report, Floyd J. McDowell 763
Response from Canada, Gary W. Batstone 50
Response from the United States, Hugo F. Schunhoff 50
Retarded deaf teenager, language for the functionally, Marny Worden Olson 451
Rhythm program for deaf children, a, Mary Lou Koelkebeck 366
Rice, Marcia, et al, Apple tree—a structured approach to language 636
Ries, Peter, Current activities of the Annual Survey of Hearing Impaired Children and Youth (no paper submitted).
Ripley, Peter H.:
- Dormitory personnel as professionals 523
- Report on Houseparent section 748

Rislov, Kenneth L., A public school plan for regional program and curriculum development 532
Risser, Linda and Ellen Erikson, grouptalk 678
Roberts, Harold G., deaf-blind children—education communication (Panel), (no paper submitted).
Role of language in the child's development, the, Hans G. Furth 258
Rosen, Roslyn, Communication: key to education 527
Rosenbloom, Betty and Mary Baker, video stories 678
Russell, W. Keith, Nick L. Smith and Stephen P. Quigley, deaf children's understanding of relative clauses and negation 666

S

Page

Schatz, Virginia W., percussion instruments—tools for creativity 536
Schowe, Ben, Jr., Introduction to—action plus reaction equals interaction 678
Schowe, Ben, Jr. and Josephine Diagnonale, Workshop—writing 678
Schuchman, John S., Gallaudet College "present and prospects"—undergraduate program 543
Schunhoff, Hugo F., response from the United States 50
Scott, Edward W. and David N. Adams, sex education and drug abuse 546
Scouten, Edward L., English as a function on the postgraduate level 557
Scouten, Eleanor P., An early start with visible English 564
Section meetings 44
Self-concept, the development of the, Mildred Alexander 78
Services to deaf-blind children in Michigan—slide presentation with tape presentation, Sandy Skubick, Tim Skubick, Barry Karp and Don Kemp 712
Sessler, Charles H., Principles of auditory training 566
Sewell, Helen Ross, My not-so-secret love, MIVR (Merv) 573
Sex education and drug abuse, Edward W. Scott and David N. Adams 546
Shahan, Pauline, Necrology committee report 762
Shipman, Eldon E.:
  Deaf-blind program at the West Virginia Schools for the Deaf and the Blind 576
  Nominating committee report 743
Simmons-Martin, Audrey, early education 577
Sindlinger, Stephen, developmental vision 583
Sitton, Ann and Janet Coscarelli, audiological management of infants—birth to 3 years 646
Skubick, Sandy, et al, services to deaf-blind children in Michigan—slide presentation with tape presentation 712
Slow learner as an individual, the, Nita M. Minton 414
Smith, Nick L., et al, deaf children's understanding of relative clauses and negation 666
Social learning curriculum, a,—an alternative for the noncollege bound student, Charles A. Burton and Marilyn P. Nugent 717
Social needs of the deaf child in the residential school, meeting, Olaf Tollefson 612
Some concepts of positive mental health for teachers in secondary schools for the deaf: or, life with meaning, Larry G. Stewart 594
Something for everyone—career education at the Marie H. Katzenbach School for the Deaf, James P. Lenox 383
Speech discrimination behavior of a preschool child, an investigation of sensory input change in the, Richard L. Baldwin 110
Speech improvement for deaf adolescents, Patricia A. Archambault 101
Speech, maintaining and building upon the basic foundations of, Marcia Faier Tash 599
Speech training device, a visual. SPOT, (Special phoneme optical translator), Edgar L. Lowell, et al 725
"Special" deaf child, the, Winnifred Cory 205
SPOT, (Special Phoneme Optical Translator). A visual speech training device, Edgar L. Lowell, Virgil B. Elings and David T. Phillips 725
Standards for the certification of teachers of the hearing impaired, committee on professional preparation and certification, in: Report on Council on Education of the Deaf, Ralph L. Hoag 756
Status report on mid-Atlantic (north) and Caribbean regional deaf-blind center, Khogendra N. Das 211
Stewart, Larry G., Some concepts of positive mental health for teachers in secondary schools for the deaf: or, life with meaning 594
Stillman, Robert D., Measuring progress in deaf-blind children 587
Strategies for teaching 3- to 4-year-old hearing-impaired children, Jean Moog 422
Strategies for teaching 4- to 8-year olds, Helen R. Golf 267
Stuckless, E. Ross and Gilbert L. Delgado, post-secondary facilities for the deaf (no paper submitted).

Student management: — Page
  William J. McClure — 732
  Edward W. Tillinghast — 735
Student management at the Model Secondary School for the Deaf, Don G. Pettingill — 477
Study of the relationship between the articulation and vocabulary of hearing impaired parents and their normally hearing children, the, H. William Brelje — 130
Systems approach to individualizing instruction for deaf children, a, Frank W. Powell — 494

T

Taking English to parents and preschoolers, Mildred Alexander — 74
Tangibles and intangibles of behavioral management with students, Lewis B. Wahl — 623
Tash, Marcia Faier, maintaining and building upon the basic foundations of speech — 599
Teacher education—secondary level, George Propp (no paper submitted).
Teacher preparation programs, implementing a philosophy of total communication in, Leo Dicker — 226
Teacher/researcher interaction: A model and an example, Arthur Boothroyd — 122
Teacher training programs, the relationship of programs for multiply disabled deaf children to, Jacob F. Pino — 490
Teaching, learning, and mental health, James L. Collins — 194
Teaching of speech as a part of total communication, the, Ann Bryan — 149
Theme: "Educational Crossroads for Deaf Children", 46th meeting of CAID.
Tillinghast, Edward W., Student management — 735
Tims, Martha, Reduction of standing up behavior through token reinforcement — 608
Tollefson, Olaf, Meeting social needs of the deaf child in the residential school — 612
Toomer, Sarah W., associate editor, Foreword — v
Total communication in teacher preparation programs, implementing a philosophy of, Leo Dicker — 226
Total communication is a must, Roy K. Holcomb — 323
Total, communication language acquisition through, David M. Denton — 224
Total communication, the teaching of speech as a part of, Ann Bryan — 149
Training program for professional afterclass staff in residential schools for the deaf, Kendall D. Litchfield — 387
Trboyevich, Goldie, newsletter report — 747
Treasurer's report, Gerald Burstein — 750, 751, 752
Trends and issues in day school secondary programs, Herbert W. Barkuloo — 117
Turechek, Armin G.:
  President, CAID, presiding — 48
  Leadership, *see:* Resolution No. 3 — 764
  Report — 744

U

Use of media in vocational training, John W. Hodgson — 311

V

Val, Sarah, and George McClendon, workshop- film-making — 678
Various aspects of growth in reading on a primary level, Sister Maura Costello — 199
Vernon, McCay, psychodynamics surrounding the diagnosis of a child's deafness — 616
Video stories, Mary Baker and Betty Rosenbloom — 678
Visible English and the combined system in language acquisition, the effectiveness of, Alma L. Alexander — 53
Visible English, an early start with, Eleanor P. Scouten — 564
Vision, developmental, Stephen Sindlinger — 583
Vision utilization training for deaf children, Neil F. Lowell and Larry Quinsland — 736

Page

Vocational (job oriented) programs in schools for the deaf, prevocational and, John M. Degler — 218
Vocational learning-maturation . . . initial strategies for enhancing, William J. Howard — 658
Vocational training, use of media in, John W. Hodgson — 311

W

Wahl, Lewis B., tangibles and intangibles of behavioral management with students — 623
White, Alfred H., language acquisition in deaf children — 631
Withrow, Frank, priority recommendations of the National Advisory Committee on Education of the Deaf — 405
Wolff, Sydney, Piaget workshop—cognition and learning — 628
Workshop:
  Film-making, George McClendon and Sarah Val — 678
  Piaget—Cognition and learning, Sydney Wolff — 628
  Writing, Josephine Diagonale and Ben Schowe, Jr — 678
Writing—Workshop, Josephine Diagonale and Ben Schowe, Jr — 678
Wyks, Hollis W., old whines, new battles — 625

Y

Young, Ellen B., preschool verbotonal auditory training — 633
Young teenage deaf and reading, the, Sister Catherine Fitzgibbon — 239

Z

Zeiser, M. Lynn, and Norman P. Erber, classroom observation under conditions of simulated profound deafness — 661

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c.1
HV1663 Davis, Ferne E. and Sarah
D292 W. Toomer, eds.
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OF THE 46TH MEETING...
AMERICAN INSTRUCTORS OF

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